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ABSTRACT

Follow-up information was collected on 1500 students who attended a two-year occupational high school, in order to relate predictor measures to success during training and subsequent job success. Although not predictive of dropouts, variables in the pre-test battery did predict performance in academic and shop courses; ratings of job success were available for too few subjects for analysis to be done, though it would appear that brighter, more motivated males perform less well in low level, repetitive jobs than their colleagues. Work attitudes and program evaluation were sought from former students now employed and from 70 employers. Among other findings, it was discovered that, while most students felt their shop training was the most valuable aspect of their occupational program, 40 percent hold jobs unrelated to that training, and employers and teachers valued work attitudes more highly. Employers requested more on-the-job training. Recommendations include: adjustment of courses to changing demands of local industry; providing students with a variety of skills related to a cluster of jobs; emphasizing favorable work attitudes; preparing students to cope with paperwork, including job applications. (For a summary of main findings, see CE 000 980.) (AJ)

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research for action

CE

DIFFERENTIAL VALIDITIES FOR SHOP COURSES

PROPOSAL B: FOLLOW-UP OF SUBJECTS' WORK EXPERIENCES

FINAL REPORT
April, 1973.

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VOLUME ONE: PROCEDURES AND RESULTS

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ABSTRACT

About 1500 former students who attended an occupational high school in Ottawa during the three years after the school opened (1967-1969) were the target group for an extensive follow-up study. Efforts were concentrated on locating the 1969 cohort. Information on the students' school and work experiences was collected by means of a mailed questionnaire, which was returned by almost 600 students. The response rate for the 1969 cohort was 73%. Supplementary information was collected from about a third of the respondents in a personal interview. In addition, seventy employers of respondents in the follow-up group were interviewed.

A summary of the major findings of the study follows this abstract.

Copies of all the instruments used in the study are presented as Volume Two of the report.

Summary of Main Findings.

A questionnaire was administered to about 1500 students who had entered Highland Park High School in Ottawa during the years 1967 - 1969. The students were considered as belonging to three mutually exclusive groups, as follows:

Group 1: the 287 students in first year at the school in September, 1969, who wrote the complete battery of specially developed tests which were being validated as predictors at that time

Group 2: the 72 students entering in the same year who, for various reasons, did not write all the tests

Group 3: the 1160 students from the previous two years for whom addresses were found in the school files.

Whenever it was felt that the greater length of time out of school of the Group 3 students may have had a substantial influence on the type of information being collected (for example, number of jobs held, salaries, etc.), the data for Groups 1 and 3 were analysed separately. The number of respondents from Group 2 was too small to warrant separate consideration for this group (data from Group 2 were included in the tabulations prepared for all groups combined). The students in Group 1 were the primary focus of the study, since one of the aims was to relate predictor measures (attributes before training) to success during training and subsequent job success.

Selected Results.

General Information.

... 80 students in Group 1 and 14 in Group 2 were still at the school in May, 1972; including these students, 73% of Group 1, 47% of Group 2, and 31% of Group 3 responded to the questionnaire (a total of 597 students).

... of the students who had left school, 90 in Group 1, 12 in Group 2 and 91 in Group 3 were interviewed.

... 70 employers, 33 employing Group 1 students and 37 employing Group 3 students, were interviewed.

... for all three groups combined, 64% of the 505 out-of-school respondents were male; 9% of the males and 28% of the females were married.

...the average age of Group 1 respondents was 18.0 years, compared with 20.1 years for Group 3; there was little difference in average age between males and females.

... 73% of the females from Group 1 who had left school returned usable questionnaires, compared with 59% of the males.

... the few significant differences on the predictor test variables found between respondents and non-respondents in Group 1 did not appear to be psychologically meaningful (p.32).

... a maximum of 55% of the students in Group 1 could be considered successful in terms of gaining a Certificate of Training (COT) at the end of second year; 49% of the respondents in Group 1 and 72% in Group 3 reported that they had been awarded COT's (thus Group 3 respondents over-represented successful students, which, as well as differences in length of time out of school between Groups 1 and 3, would have had considerable influence on many of the comparisons between the two groups) (p. 35).

... respondents in all groups came from the full range of shop specialty courses offered (p. 38).

... among respondents in Group 1, the specialty areas of Typing, Personal Grooming, Upholstery and Welding produced noticeably more graduates than non-graduates (p. 39).

... 14% of Group 1 and 33% of Group 3 respondents had taken further training since leaving school (p. 52); only 15% of the students interviewed said they would not take further training even if it meant they would get a better job (p. 62).

Employment Patterns.

... 35% (44) of respondents in Group 1 and 19% (68) in Group 3 were unemployed at the time of the survey; excluding those not looking for work, the percentages become 25% and 11% respectively, or 15% for all groups combined (p. 43).

... 14% of Group 1 and 5% of Group 3 respondents had never worked since leaving school (p. 45).

... in Group 1, one third of the unemployed male respondents and two fifths of the unemployed female respondents who had left school and were not attending another school held Certificates of Training (p. 46).

... in all groups, almost 80% of the married males, but only 40% of the married females, were working (p. 46).

... in terms of the major group codes in the Canadian Classification and Dictionary of Occupations, 1971, 75% of the employed females held jobs in two areas - Clerical and Service; 25% of the employed males held jobs in the Service area, and a further 40% were evenly divided in the Clerical, Product Fabricating and Construction Trades major groups (p. 54).

... about 40% of the respondents in all groups combined found their school shop training had been no use at all in their present jobs (p. 48); these respondents were spread across most of the specialty areas (p. 50).

... only about 10% of the students in all groups who eventually found jobs needed more than 3 months to do so; about a fifth of the students found their first jobs through the work experience programme or through someone at the school (p. 51).

... the average number of jobs held since leaving school in both Groups 1 and 3 was about three; the median length of time on first jobs and on second jobs for respondents interviewed in both groups was about 3 months; the median length of time on present jobs was about 5 months in Group 1 and about 13 months in Group 3 (p. 61).

... including a few part-time workers, the average number of hours worked on first jobs by respondents interviewed was 41.1 hours, and, on present jobs, 40.6 hours (p. 56).

... the average weekly salary on first jobs for all respondents interviewed who worked more than 30 hours most weeks was $74.25; on present jobs the average weekly salary was $95.38 over all groups ($88.83 in Group 1 and $103.73 in Group 3); no significant differences in average weekly salary were found between holders and non-holders of Certificates of Training (p. 57).

... in Group 1, the average weekly salary on present jobs for males was $100.00, for females, $73.42; in Group 3, the corresponding figures were $115.00 and $79.30; in all salary comparisons made between the sexes, males earned significantly more than females (p. 58 & 59).

... the highest hourly rate was $6.00 (a music teacher) and the lowest was 55¢ (a carnival assistant).

... about two thirds of the employed respondents who were interviewed thought their pay on their present jobs was enough in relation to their experience, abilities and training.

Attitudinal Information.

... of the 315 students in all groups who were working, more than three quarters were very satisfied or quite satisfied with their present jobs; more than three quarters of those satisfied expected to be in the same job for at least another year; about one third of those not satisfied thought they would be in the same job a year later (p. 64).

... 56% of Group 1 and 69% of Group 3 respondents to the questionnaire rated themselves as having been successful on the whole since leaving school; 90% of those rating themselves as successful liked their work; 40% of those undecided or rating themselves as unsuccessful liked their work (p. 65).

... three quarters of the 505 out-of-school respondents to the questionnaire were glad they had attended the school; 70% of those who were interviewed had been back to visit the school at least once since leaving.

... 64% (123) of the students interviewed, whether they were working or not, felt that the occupational programme had prepared them well enough for getting a job.

... the students interviewed felt that their training in shop skills had been the most valuable aspect of the occupational programme for them; employers and teachers thought the development of favourable attitudes toward work was the most important; the students felt that their academic training was more important than their teachers or employers did (see p. 82 for qualifications to these reported results).

Employer Interviews.

... only 29 (41%) of the 70 employers interviewed said that the occupational programme prepared its students well for the types of jobs held by the respondents in their firms; students in horticultural and hospital care jobs were thought to be well equipped for employment, whereas the preparation for hairdressing, janitorial and general low level white collar jobs was felt to be poor (p. 71).

... 44 employers provided on-the-job training apart from orientation for the kinds of jobs held by the respondents; half of the 70 jobs required use of special equipment, but in only 7 jobs was knowledge of how to use the equipment a pre-requisite for getting the job (p. 73).

... in almost all categories of jobs the employers considered there were possibilities of advancement (the exceptions were housekeeper/baby-sitters and some janitorial jobs) (p. 76).

... over all jobs at the levels of those held by the respondents whose employers were interviewed, the most valued employee characteristics were good attitudes and work habits, and the ability to be co-operative with other workers (p. 79).

... more than half of the employers interviewed said that they, or their firms, provided financial assistance for their employees to improve their qualifications; only 9 employers, none from large firms, said that they did not encourage their employees in some way to improve their qualifications.

Prediction of Success during Training, and Job Success.

... academic and shop course marks at the end of second year could be predicted almost as well as those at the end of first year (multiple R's obtained ranged from 0.51 to 0.62); these results must, however, be regarded as tentative, since they have not been cross-validated (p.102).

... ratings of job success were available for too few subjects for multiple regression analyses to be done using these ratings as criteria; significant negative zero order correlations were found between rated job performance and three predictor variables (IQ, and two interest scores) for males; for females, marks in the Typing course and interest in the Service tasks on the Interest Inventory were significantly related to rated job performance (p.105).

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1. Introduction

In most of the larger cities in Ontario during the last ten to fifteen years there has been established at least one high school with an "occupational" or "special vocational" programme. In several schools this type of programme is the only type available. The occupational high school or programme evolved because it was realised that a significant proportion of secondary school age students were not being catered for adequately by regular four or five year programmes. Most of the students who attend these schools have been recommended for the programme by their elementary school principals, though some transfer from other high schools, and some are recently-arrived immigrants who speak little or no English. Usually, students who are recommended for the programme have had a history of lack of progress in conventional school work, and it is thus felt that they have minimal chances of succeeding in regular business, technical or academic programmes at high school level.

The occupational or special vocational curriculum usually features work in a wide variety of shop areas (the two special high schools in Ottawa provide respectively 26 and 28 different courses from which the students can choose). It is difficult to give a precise definition of the terms "occupational" and "special vocational": they are frequently used synonymously across school systems, yet may reflect some differences in emphasis on shop work from system to system, or even from school to school. For the remainder of this report the term "occupational" will be used, and it will be assumed to describe a curriculum for non-academic, low-achieving students in which approximately half (or more) of the time is devoted to shop work. Other features of the occupational programme

include a great emphasis on the individual counselling of students (since the students have usually experienced learning difficulties in the past) and the provision of extensive remedial work in reading and mathematics.

1.1 Objectives of Occupational Training

The difficulties of defining the goals of schools in general, and of vocational or occupational schools in particular, have been clearly discussed by Kaufman (1971, p.31), in a report prepared as a preliminary to an evaluation of occupational programmes in Toronto. Nevertheless, it is generally felt that the primary purpose of the Ontario occupational course is to make available suitable education and training so that the students for whom it is provided may become useful citizens in their own right (Wilson, 1970). This may suffice as a general broad definition, but unless one can formulate some criterion for "useful citizen" it is a poor basis for an evaluation study. It has also been said that the occupational shop programme aims to equip the students with basic work skills, good work habits and attitudes, and to aid them in obtaining and retaining suitable jobs when they leave school. Again, the problem of definition is similar, since determining what constitutes "suitable jobs", and what level of performance can be expected from occupational course graduates, is especially difficult. The characteristics of these students and the programmes they have taken are very different from most groups and programmes that have been studied (see Section 2.1). Studies such as the present one provide information which may help towards a solution of this problem of definition.

1.2 Why a follow-up study?

It is difficult to evaluate the degree to which an educational programme is achieving its objectives when such important factors as the level

of performance to be expected from its former students cannot be clearly specified. However, there are many useful questions which can be posed and much information collected that will be of value in providing at least a partial assessment of the programme's effectiveness. Since it is expected that most students from the occupational course in Ontario will go directly into the labour market, and many of the course's more specific objectives relate directly to the preparation of students for work, a comprehensive evaluation cannot be made without reference to the post-school experiences of its students. By conducting a systematic follow-up study of a representative group of former students, in which the work experiences of the students are followed over a reasonable time interval, it is possible to find out how well the students are doing, even if no standard of how well they should be doing can be specified. Data on the nature of jobs the students have entered, the ease with which they obtained them, their ability to retain jobs, their satisfaction with and success in their work, and their perceptions of how useful their shop training has proved to be can provide valuable information to the planners of occupational curricula.

The remainder of this report describes the procedures and results of a follow-up study that was conducted with students from one occupational high school in Ottawa.

1.3 Specific Objectives of the Study

The study had two main objectives. These were:

1) to study the relationships between attributes preceding training, achievement during training, and subsequent job performance of a group of approximately 300 students in a special vocational programme

2) to document what has happened to an entire cohort group of low academic ability students over a period of at least three years, beginning with their entry into secondary school.

The procedures and results from the second objective will be presented and discussed first in the report, in Section 2. The procedures followed in carrying out the first objective have largely been described elsewhere (Lokan and Halpern, 1972; Isabelle and Lokan, 1972). It has been possible to carry out this objective because data on a large number of input variables were collected for the entire entering groups of students at the school in two successive years (1969 and 1970). The development, validation and cross-validation of a test battery tailored for low-reading, low-achieving secondary school students has been described in detail in the reports cited above. The relationship of the input measures to later school success, and to job success where this could be ascertained, is discussed in Section 3 of this report.

2. Follow-up of School and Work Experiences

2.1 Related Studies

A considerable number of follow-up studies of students from vocational or technical schools in the United States has been carried out. Little (1970) gives a bibliography and review of 101 such studies that have been reported since 1965. Some of these studies, notably that of Eninger (1965), have been very extensive, investigating thousands of students over time spans of up to ten years. However, most of the studies were concerned with graduates of four-year regular vocational or technical curricula, and many dealt with graduates of post-secondary courses. Where the mean IQ of subjects in these studies was reported, it was usually in the vicinity of 100, rarely below. By contrast, the median IQ (non-verbal) of all students in the school featured in the present follow-up study has been found to be within a point or two of 85 each year.

Overs (1971) has reviewed 74 follow-up studies of people who have undergone vocational training programmes in various rehabilitation centres. Almost half of these people had physical impairments, about 40% were emotionally disturbed, and the remainder were classified as mentally retarded. Whereas a few students in our study were physically handicapped, a few had been professionally diagnosed as emotionally disturbed, and a small percentage could be considered to be mentally retarded (no more than 10%), the description "slow learners" would be more applicable to the group as a whole. Thus, none of the studies reviewed by Little or Overs provides a direct basis for comparison with the present study. Nevertheless, some of the findings from these studies will be referred to in this report where they seem to be of interest.

Two studies quite closely comparable to the present Ottawa study have been conducted recently in Ontario. In 1968 Small and Stennett (circa 1969) attempted to trace 342 students who had enrolled in an occupational high school in London three years earlier. A larger scale study, involving contacting about 2,000 former students of special high schools and special vocational schools in Toronto, was conducted during 1971 by Reich and Zeigler (their report did not become available until April, 1972, after the present study had begun). In terms of the conditions prevailing in the Canadian labour market in 1968 and 1971 or 1972, when annual average unemployment rates were 4.8%, 6.4% and 6.3% respectively (Stat. Canada, March 1973) it seems that Reich and Zeigler's results are the most directly comparable with ours. However, this comparability could well be offset by the very different representation of industries and job opportunities in Ottawa and Toronto. Findings from both the London and Toronto studies will be quoted where relevant in the body of this report.

2.2 Procedures

The procedures adopted in the follow-up will be discussed under the following headings:

a) Target Population

b) Instrumentation

c) Time Schedule and Execution of Various Phases

d) Data Analyses

2.2 a) Target Population

Initially the target population for follow-up was specified to be all students, 287 in number, who wrote the complete battery of predictor tests that was administered to first year enrollees at Highland Park High School in the fall of 1969. It was thought that most of these students, after completing the school's two year programme, would have entered the labour market during 1971, some time after the end of March (students who have a job to go to are permitted to leave at the end of the second term of their second year). However, on investigation it was found that 103 of the students were still at the school at the end of February in 1972. This group was made up of students who had failed one or more years of their programmes, students who left during 1971 but returned because they were unable to obtain work, and those who returned because the school had just extended its programme to encompass a four-year diploma course. The numbers of students in both the second and third categories were larger than expected.

Seeing that about one third of the specified target population were still at the school, it was decided that all other students who entered the school in September, 1969, but who had not written the complete battery of predictor tests, should also be followed up. At the school's request it

was also agreed that we would make some attempt to contact students who entered the school in the previous two years, from its opening in September 1967. These three groups of students were designated as:

Group 1, the initially specified target group of 287 students

Group 2, the 72 students entering in the same year but who did not write all the tests

and Group 3, the 1160 students from the previous two years for whom addresses were found in the school files.

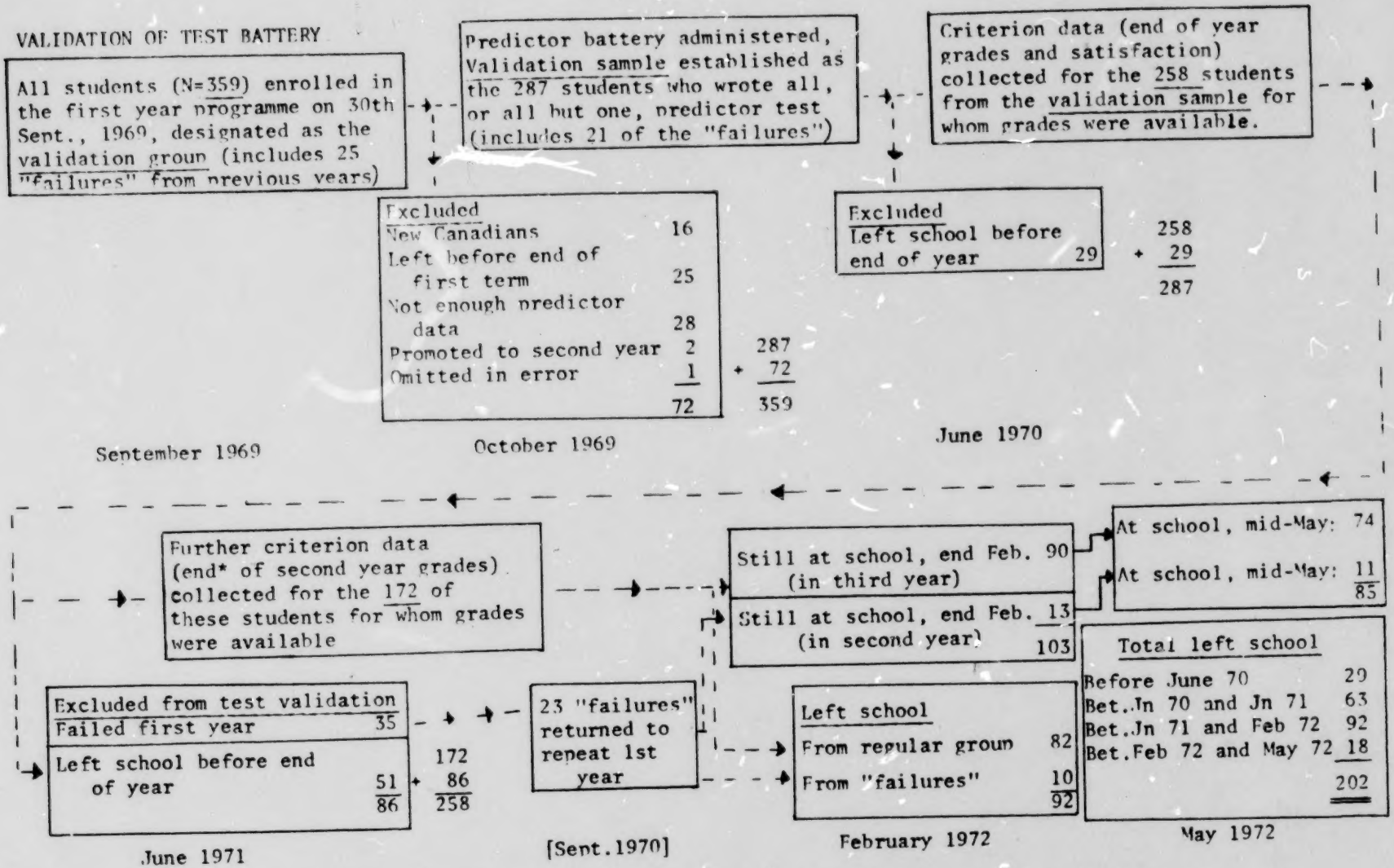
A schematic diagram showing the composition of Groups 1 and 2 is shown in Figure 1.

2.2 b) Instrumentation

It was decided that the major instrument for data collection should be a questionnaire sent through the mail. This questionnaire would be supplemented by personal interviews with a cross-section of the respondents. Following this, the employers of respondents who were working would be interviewed. Finally, respondents from Group 1 would be contacted again after an interval of six to eight months since being interviewed or returning the mailed questionnaire. These various steps in the study necessitated the development of four instruments - the questionnaire, two structured interviews for students, and a structured interview for employers. Copies of all instruments and covering letters used in the study are included in Volume II of this report. The development of the instruments will be described briefly here.

A considerable amount of time and effort was spent in deciding on the content and appearance of the questionnaire to be sent through the mail. The following desired characteristics of the questionnaire were specified:

1. sufficient information should be sought for meaningful analyses to be carried out on questionnaire data unsupplemented by interviews


I. VALIDATION OF TEST BATTERY
All students (N=359) enrolled in the first year programme on 30th Sept., 1969, designated as the validation group (includes 25 "failures" from previous years)
Predictor battery administered, Validation sample established as the 287 students who wrote all, or all but one, predictor test (includes 21 of the "failures")
Criterion data (end of year grades and satisfaction) collected for the 258 students from the validation sample for whom grades were available.
Excluded
New Canadians 16
Left before end of first term 25
Not enough predictor data 28
Promoted to second year 2
Omitted in error 1
72
287 + 72 359
Excluded
Left school before end of year 29
258 + 29 287
Sentember 1969
October 1969
June 1970
Further criterion data (end* of second year grades) collected for the 172 of these students for whom grades were available
Still at school, end Feb. 90 (in third year)
Still at school, end Feb. 13 (in second year) 103
At school, mid-May: 74
At school, mid-May: 11
85
Excluded from test validation
Failed first year 35
Left school before end of year 51
86
172 + 86 258
23 "failures" returned to repeat 1st year
Left school
From regular group 82
From "failures" 10
92
Total left school
Before June 70 29
Bet.Jn 70 and Jn 71 63
Bet.Jn 71 and Feb 72 92
Bet.Feb 72 and May 72 18
202
June 1971
[Sent.1970]
February 1972
May 1972

* since students who have found jobs are encouraged to leave any time after winter break, the March grades for students who did so were considered as end of year grades.

Fig.I: Highland Park Follow-up Study: Group Composition and Time Periods, Sent.'69 first-year students.

2. vocabulary should be at an appropriate level for low-reading students

3. appearance should be attractive enough to aid in motivating students to respond

4. type should be of adequate size

5. questions should be designed so that answering them would not involve much writing or any complicated branching

6. the total length should not exceed four letter-sized pages

Topics to be probed in the questionnaire, and in a structured interview to be carried out with as many of the respondents as possible, were specified, in order of priority, as follows:

1. Details of employment history

   (i) nature of jobs
   (ii) ease of obtaining jobs
   (iii) job retention and turnover
   (iv) proportion of time unemployed

2. Details of educational history

   (i) level reached at Highland Park
   (ii) shop specialties studied
   (iii) further education beyond Highland Park

3. Success and satisfaction on the job

   (i) overall rating
   (ii) specific aspects, e.g. salary

4. Success and satisfaction while in school

   (i) overall rating
   (ii) specific aspects

5. Relationship of school shop training to nature of jobs obtained

For the interview, it was specified that:

1. questions should be clear, and in a simple language

2. a minimum of branching should be involved

3. the interview should take no longer than 30 minutes for anyone for whom all job and education sections were relevant.

Several draft versions of both the questionnaire and the first structured interview for students were prepared by a working committee. Members of the committee were the Principal Investigator, the Project Director, the Head of Guidance at Highland Park High School, and several members of the Research Centre staff of the Ottawa Board of Education. Decisions on the division of content between the two instruments were made by this committee. The mailed questionnaire sought biographic information, details of educational history relating to Highland Park, details of present activities, and global ratings of satisfaction with the school and individual success. For the students remaining in the school a separate version of the questionnaire was prepared, including only the questions relevant for this subgroup. The interview concentrated on details of the respondents' job experiences and/or further education after leaving the school, and probed for reasons behind the global ratings in the questionnaire.

Sources used in the development of the questionnaire were Stennett et al (circa 1971), McCowan and Mongerson (1971), Norris and Katz (1970), and Flanagan et al (1971). None of these was very helpful in terms of the language level used. For the structured interview, sources consulted were Stennett et al (circa 1971, materials made available to us on request), McCowan and Mongerson (1971), Freeberg (1971), Herzberg et al (1959), and, after most of the development had been done, Reich and Zeigler (1972). Freeberg's report was particularly useful in terms of appropriate language level and the specification of relevant criteria.

The structured employer interview was prepared by a smaller committee after discussions with the school's Head of Guidance and another member of the Guidance Department who serves also as the Job Placement Officer. It was originally intended that these interviews should probe for detailed information on the subjects' job performance. We would like to have found

out which kinds of former students in which kinds of jobs were performing more successfully than others, and to try to determine reasons for their varying degrees of success. However, because of the current instability of the job market and the suspicions of some students - or their parents - that we might do something which would cause them to lose their jobs, it was decided that the focus of the interviews with employers should be on evaluating the programme of an occupational school rather than on evaluating individuals. Thus, the structured interview for employers contained only one question in a total of twenty which asked directly for a rating of the subject's job performance.

The student structured interview used in the second follow-up of Group One subjects six to eight months after the first contact was much briefer than the main structured interview. The second interview sought information relating to job stability, salary raises, and changed plans (if any) for further education.

2.2 c) Time Schedule and Execution of Various Phases

The various phases of the study and the dates on which they were carried out are listed below. Comments on the phases are made in the following text.

Item	Date
Initial telephone contact (Group 1 only)	February/March, 1972
Questionnaire administered to in-school group	May 18, 1972
Mailed questionnaire, first wave	May 19, 1972
Administration of questionnaire to absentees, in-school group	May 23 to June 9, 1972
Mailed questionnaire, second wave	June 8, 1972
Attempted telephone contact with Group 1 non-respondents	June 26-30, 1972
Personal student interviews	July 17 - August 31, 1972
Telephone student interviews	Sept. 8 - October 11, 1972
Mailed questionnaire, third wave (Group 1 & 2 only)	December 4, 1972
Advance notification letter sent to employers	January 8, 1973
Personal employer interviews	January 15 - February 23, 1973
Telephone student interviews (Group 1 only)	February 12 - March 23, 1973

Telephone contact was made in the early stages of the study with as many potential respondents in Group 1 as possible, to notify them that the study would be taking place, to ask their cooperation in completing the questionnaire, and to confirm addresses. By mid-March the addresses of all but 27 of the subjects who had left school were confirmed. By the time the questionnaires were mailed, a further 14 had been found, leaving only 13

which were never traced.

In the search for subjects' present whereabouts, the addresses and telephone numbers from the school files were tried first. In many instances the numbers were now found to belong to other families, only a few of whom knew where the family we were trying to locate had gone. In many other instances the numbers were no longer in use. Requests to telephone directory assistance brought sparse results, especially as a number of families had adopted unlisted numbers. Many potential respondents had left home. Several parents informed us that they neither knew nor cared where their son or daughter had gone. A few others regretted that they could not give us a forwarding address, because the subject had left and had not communicated with them since. Some current numbers were obtained by checking the telephone directory for families with the same name and initials as the parents' name on the school file card. A dozen or so were obtained by checking the local city directory. A few students were traced through places of employment that had been written on their school file cards when they left (unfortunately the information on the file cards, if filled in at all, was usually rather vague, e.g. "Went to work at Shell gas station"). The Motor Vehicle Drivers' Licence Dept. was helpful in tracing a few of the hardest-to-find subjects, as were the Children's Aid Society and the Police Dept. Some information was gleaned from brothers and sisters or former classmates still at the school. By far the most productive avenue in tracing addresses proved to be the school staff, particularly some of the shop teachers and guidance counsellors.

The mailed questionnaires were sent in envelopes displaying the school's address. The covering letter was printed on paper containing the school crest, and was signed by the Head of the school's Guidance Department. These

procedures were followed in the hope that a higher response rate would result because the former students would be able to identify with the source of the letter and questionnaire. It is possible, however, that these procedures may have deterred some potential respondents with negative feelings about the school. In three cases where the students were known to be very negative the questionnaires were mailed in plain envelopes, with hand-written addresses. None was returned. Pressure-sensitive name and address labels were printed by computer and were used both on the questionnaires and for addressing the envelopes. Stamped envelopes addressed to Mr. Munro, Head of Guidance at the school, were enclosed for the return of questionnaires for Group 1 and 2 students. For Group 3, because of the larger number of students involved and our anticipation of a much lower response rate (no addresses for this group were confirmed in advance), printed Business Reply envelopes, again addressed to Mr. Munro, were used. It was decided not to use Business Reply envelopes for Groups 1 and 2 because it was felt that the official appearance of these envelopes might deter some potential respondents.

It was originally planned to send a third wave of mailed questionnaires to Group 1 and 2 students during the last week in June, but this was revised in favour of attempted telephone contact at that time. Further attempts at contacting non-respondents by telephone were made persistently from September to November, and a small "third wave" of questionnaires was mailed early in December to subjects from whom it was felt that there was some chance of getting a response. The return rates from all phases of administration of the questionnaire are presented in Section 2.3 a, under Results. The questionnaire concluded with a request for the students to provide a telephone number and suggested time of day when they could be called to arrange

an appointment for an interview. Only four students over all said they did not wish to be interviewed.

The personal student interviews were conducted for the study during the summer by a qualified guidance counsellor from another school. It was essential to have a competent person who could relate well with the subjects to carry out these interviews, and it was felt that a guidance counsellor would be ideal. The interview was designed to be presented orally, with the interviewer reading an introductory page and all item material to the student. The interviewer marked the responses on the interview forms, and was instructed not to conceal anything he wrote from the respondents. To aid subjects to answer questions for which several alternatives were given, the interviewer handed the subjects separate cards containing the possible alternatives, for one question at a time. The interview originally contained two questions of the "Think back to a critical incident" type (Herzberg et al, 1959), intended to probe for reasons for respondents' satisfaction or dissatisfaction with aspects of their work. However, these questions were subsequently omitted, after most of the first twenty subjects interviewed experienced difficulty in answering them. Freeberg's (1971) procedure of paying interviewees a small sum of money (in our case, $2.00) for their time was adopted. The average time per interview was approximately 25 minutes. A disadvantage of conducting the interviews during the summer was that several subjects selected for interview could not be reached because they were away on holidays.

Following the success experienced by Reich and Zeigler (1972) with telephone interviews, it was decided that a sample of the Group 3 respondents in our study should be given the structured student interview by telephone. These interviews were conducted in the fall by two recent University graduates and one third year undergraduate. The average time per interview was

about 20 minutes, though all three interviewers found that some respondents wanted to talk for much longer than this. No subject with whom a telephone interview was requested refused to participate, though about one-third of those selected for interview could not be reached. Selection details and actual numbers reached can be found under Results.

Each personal or telephone interview concluded with a request for the subject's permission, if he or she was working at the time, for us to contact his or her employer. The subject was told that we wanted to find out whether employers had suggestions or comments to make about the programme in schools like Highland Park. About one third of the students did not grant this permission (actual numbers are presented in the Results section). Most of the employers of students who gave permission were later interviewed. A letter notifying employers that they would be approached for interviews was sent about a week before any appointments were made. A copy of this letter is included in Volume II of this report.

The interview conducted with employers was structured in format, but included several questions where the employer was asked for comments. Material from the study conducted by Stennett et al (circa 1971) in London, Ontario, was useful in the development of this interview. Background information about the company and the nature of the work done there was sought. A few questions related to the work being done by the student in the follow-up sample. Other questions asked for opinions on the adequacy of the occupational programme and suggestions for things the schools might do to equip students better for employment. All the employer interviews were conducted by a competent registered nurse who has been involved with community groups at many levels of society for a number of years. A copy of the interview may be found in Volume II of this report.

During both the student and employer interviews, the respondent was asked to rank order four main areas of training included in the occupational programme in order of importance. The four areas specified were :

i) academic subjects

ii) shop skills

iii) how to get along with other people

and iv) development of favourable attitudes toward work.

In order to relate the students' and employers' perceptions of the importance of these training areas with the views of those involved in the training process, the same question was asked (via a brief rating form - see Volume II) of all the teachers in the school. As could perhaps be expected, some differences among the three groups - students, employers, and teachers - were found. Results are shown in Tables 33 and 34.

2.2. d) Data Analyses

For this part of the study, that is, the documentation of the school and job experiences of a cohort of students, descriptive, rather than inferential, statistics are appropriate. Data analyses consisted almost entirely of frequency and percentage distributions, with means (or medians) and standard deviations calculated on some variables. Occasionally t-tests were carried out to test for significant differences between groups of students, particularly between respondents and non-respondents in various categories.

All questionnaire and student interview responses were coded and keypunched. Most of the analyses were done on an IBM 360/85 computer with the SPSS package (Nie et al, 1970), though a few of the simpler univariate distributions were done on a card sorter.

2.3 Results and Discussion

The results of the follow-up study will be presented under the following headings:

a) Response Rates for Questionnaire and Interviews

b) Characteristics of Respondents, by group, including Comparisons with Non-respondents

c) Shop Specialties Studied and other School-related Information

d) Employment Status, Salary and other Job-related Criteria

e) Employment Attitudes - Students

f) Information from Employer Interviews

g) Employment Attitudes - Employers

h) Objectives of Occupational Programme - Students, Employers, Teachers

i) Students' Attitudes toward Highland Park High School

Discussion will be included, where relevant, with the results as they are presented.

2.3 a) Response Rates for Questionnaire and Interviews

i) Questionnaire

As previously mentioned (Section 2.2c, p.12), it was attempted to confirm current addresses for all subjects in Group 1 before the questionnaire was mailed. Of the 202 addresses required, all but 13 had been obtained by the mailing date. For these 13, addresses from school files were used, even though they were known to be out of date. The sources through which addresses were confirmed are shown in Table 1.

Table 1

Sources for confirmation of addresses, Group 1, prior to mailing of first wave.

Source	Number
Telephone contact (at number on school file card, or referred on from that number, or telephone directory)	131
School staff members, friends, siblings at school	31
Places of employment	5
City Directory	8
Drivers' Licences Dept.	2
Children's Aid Society	5
Police Dept.	3
Notices posted at Open House	2
Total confirmed	187

The City Directory and the Drivers' Licences Dept. were used to trace a few further addresses between waves.

The actual numbers of questionnaires administered or mailed are shown, by group, in Table 2 for the first wave and Table 3 for the second wave. It appears that the preliminary confirmation of addresses paid some dividends, as the percentage of responses from mailed questionnaires was 48% for Group 1, and only 30% from Groups 2 and 3 (see final column of Table 3).

By way of comparison with other follow-up studies of former vocational students using mailed questionnaires, the return rate of 48% after two waves can be assessed against the 32% obtained by Stennett and Small (c. 1969) in London, Ontario, after one mailing and subsequent telephone

Table 2: Group Composition and Response Rate of First Wave, Questionnaire

	Composition of groups 18/5/72	No. of q'aires admin.or mailed	Excluded	Responses No	%	Non-responses. Ret., addr. unknown	Other No.	%
GROUP 1								
(Orig.test validation sample, Sept.69)	Left sch.: 202	190	[At A.T.C.[a] : 9 Very ill : 1 Deceased : 2]	58	(30)	15	117	(62)
	Still on roll : 85	78	[Left sch. : 5 At Camp : 2]	79[b]				
	Total 287	268		137	(48)		117	(41)
GROUP 2								
Rest of 1st year, Sept.69	Left sch.: 58	57	[Deceased : 1]	11	(20)	14	32	(56)
	Still on roll : 14	14		14				
	Total 72	71		25	(35)		32	(45)
Total Grouns 1 and 2 :		359						
GROUP 3								
Students from 1967 & 1968, now left sch.		1160	1145	[At A.T.C.[a] : 14 Deceased : 1]	225	(20)	283	637 (56)

a) Adult Training Centre (for educable mentally retarded adults)
b) Includes one of the five who left, who was sent a questionnaire through the mail

Table 3: Questionnaire Return Rate, Second Wave, and Total, Waves 1 and 2

Group	Second Wave: Non-responses, other (from Table 2)	Second Wave: No. mailed	Second Wave: Responses No.	Second Wave: Responses %	Second Wave: Ret., addr. unknown	Total, Waves 1 and 2 (incl. students still at school): Total No. possible[a]	Total, Waves 1 and 2 (incl. students still at school): Responses, entire groups[b] No	Total, Waves 1 and 2 (incl. students still at school): Responses, entire groups[b] %	Total, Waves 1 and 2 (incl. students still at school): Responses, excl.Ss' at sch. %
1	117	123[c]	34	(28)	5	284	175	(62)	(48)
2	32	32	6	(19)	4	71	31	(44)	(30)
3	637	636[d]	120	(19)	43	1144	345	(30)	(30)

a) Including students from Group 1 at Adult Training Centre (interviews were conducted with 5 of the 8 students who were there early in June, 1972)

b) These figures do not include 2 unusable questionnaires returned in Group 1 and 1 in Group 2

c) Includes 5 "address unknown" subsequently traced, and one student who had left A.T.C.

d) Excludes one further student known to be deceased

contact. McCowan and Mongerson (1971) received usable responses from 53% of their sample of almost 3,000 students in New York State after four mailings. Pucel et al (1971) received responses from 42% of 234 subjects in Service, Skilled and Miscellaneous Occupations in Minnesota after a single mailing (their over-all rate, including this group and 834 students in higher level occupations, was 54%). These studies were all conducted about one year after the subjects had completed or left their respective training programmes. (In comparing response rates it is important to know the time interval between programme completion and follow-up, since evidence from many studies shows that the more recently subjects have completed their training, the easier they are to locate). One other study which was conducted about one year after programme completion (the Colorado Vocational Education Study, 1966, reviewed by Little (1970)) received responses from 71% of 491 students. A similar response rate was achieved in a study of 243 students randomly selected from 19 Area Vocational-Technical schools in Tennessee (Schriver and Bowlby, 1971). The number of questionnaire mailings was not specified for the last two studies in the reports consulted.

The response rates for two other studies are of interest here, though the studies did not use mailed questionnaires. Freeberg and Reilly (1971) interviewed three groups of former youth-work training programme enrollees in several U.S. cities. For the group who had been out of the programme for "several months and more", the overall success rate (respondents participating compared with total number of attempted contacts) was 30% to 35%, though in two cities it was above 50%. Reich and Zeigler (1972) reported successful contact by telephone of 1160 former students of special vocational and special high schools in Toronto, about 60% of the target group, more than 18 months after they left school. Of the 1160 contacted, 1146 were interviewed, mostly by telephone. The target group, however, did not include

students who moved out of Metropolitan Toronto, who would probably have been more difficult to contact. The target group also did not include about 22% of the total group who transferred to other schools.

The questionnaire response rate in the present study was improved somewhat by persistent attempts to contact non-respondents by telephone. By the end of November, 1972, the number of usable questionnaires had risen from 92 to 111, almost 60% of the target group. A further three were recieved in response to the third wave of mailed questionnaires early in December. Finally, during the telephone follow-up conducted in February and March of 1973, twelve students who had not previously been reached responded to the questionnaire. The final over-all response rate is shown by group in Table 4 below. This table also includes a few respondents from Groups 2 and 3 whose questionnaires arrived after the end of June, 1972.

Table 4

Over-all Response Rates for Questionnaire, by Group

Group[a]	Out-of-school			Total, incl. in-school & A.T.C.		
	N	No. of responses	%	N	No. of responses	%
1	191	126	(66)	284	208	(73)
2	57	19	(33)	71	33	(47)
3	1142[b]	360	(31)	1142	360	(31)

a) For description of groups, see p.7
b) Excludes three further deceased subjects

It should be noted that the 73% rate for Group 1 includes only usable responses. Two unusable questionnaires were received, and eight students who were reached by phone said they were not interested in completing

the questionnaire. Thus the over-all contact rate was 218 of 284 subjects, or 77%.

ii) a) Student Structured Interview - Personal

It was originally planned that about 100 interviews would be conducted with respondents from Group 1. However, by the time the interviews were scheduled to take place, only 92 responses had been received. In approaching these 92 subjects the interviewer found three were away on holidays, two had moved away from Ottawa, three were too busy, five had decided they did not wish to be interviewed after all, and ten had either moved or given a telephone number that was not a valid number two months later. Altogether 74 students from Group 1 were interviewed in person, including 69 of the above 92, and a further five who responded to the questionnaire as a result of the telephone follow-up at the end of June. These were supplemented by eleven interviews from respondents in Group 2, and 26 from Group 3. These data are summarised in Table 5 below.

Table 5

Student Personal Interviews, by Group

Group	Number Interviewed	% of respondents (as at 31/8/72)	% of total out-of-school group
1	74	71	39
2	11	79	19
3	26	8	2
Total	111		

In selecting students from Group 3 to be interviewed, the respondents were sorted into alphabetical order after out-of-town students and all who had attended the school for less than one year had been eliminated. The male:female ratio of the remaining respondents was approximately 2:1. Subjects to be interviewed were selected in this ratio. Since students who disliked the school were probably under-represented amongst the respondents, 9 males and 5 females who marked on the questionnaire that they were not glad they had attended the school (one in two of those who responded thus) were selected. A further 14 males and 6 females were chosen by selecting every twelfth male and every eleventh female. Of these 34 subjects, 26 were interviewed.

ii) b) Student Structured Interview - Telephone

The remaining respondents in Group 3 were stratified according to sex, like/ dislike the school, and whether they had held no full-time jobs, one to four full-time jobs, or more than four full-time jobs since leaving school. Apart from the like/dislike stratum, in which all subjects were chosen, the respondents nominated for interview by telephone were selected at random in the same proportion as the number in the stratum was to the total number of respondents. Details of the numbers selected by category, and the actual numbers of interviews obtained, are given in Table 6.

In addition to the telephone interviews conducted with Group 3 subjects, a further sixteen subjects from Group 1 and one from Group 2 were interviewed in this way. The over-all numbers of students interviewed, including both personal and telephone interviews, are shown in Table 7.

Table 6

Student Telephone Interviews by Category of Respondent, Group 3

Sex	Category	Number Selected	Number Obtained	% Obtained[a]
Male (N=65)	Disliked HPHS	9	7	
	No jobs since leaving	5	5	
	Few jobs since leaving	38	23	
	Many jobs since leaving	13	7	
		65	42	65
Female (N=35)	Disliked HPHS	7	3	
	No jobs since leaving	3	3	
	Few jobs since leaving	19	12	
	Many jobs since leaving	6	5	
		35	23	65
	TOTAL	100	65	65

a) It was by chance that exactly the same percentage of males as females was interviewed.

Table 7

Total Number of Student Interviews Conducted, by Group (including both personal and telephone)

Group	Number conducted	% of respondents (as at 23/3/73)	% of total out-of-school group
1	90	71	47
2	12	63	25
3	91	25	8
Total	193		

iii) Employer Structured Interviews

It will be recalled that the students who were interviewed in person, and, later, those from Group 3 who were interviewed by telephone were asked to give us their permission to interview their employers. It was realised that this would inevitably lead to a biased sample of subjects whose employers would be interviewed. In follow-up studies ethical considerations concerning the subjects' "right to privacy" when it is desired to collect, for example, records of on-the-job performance, are particularly apparent. Even if full employment prevailed in the job market it would probably be considered unethical to collect such information without the subject's knowledge and consent. With the present high level of unemployment it seemed very important not to violate these ethical standards.

Of the 48 subjects in Group 1 who were working full time at the time of the interview, 33 gave the required permission, 15 withheld it. From Group 3, 42 gave permission and 23 withheld it. This "permission rate" is considerably higher than the 44% obtained by Stennett and Small (c.1969), and the "approximately 50%" obtained by Freeberg and Reilly (1971). This may have been due to the more general nature of the question asked (see p.11).

The target group to be interviewed, therefore, consisted of 75 employers, 33 employing Group 1 students and 42 employing Group 3 students. Interviews were conducted with all 33 employers in the first category, and with 37 of the 42 in the second category. Of the five employers who were not interviewed, one worked for a firm which was in the process of moving premises, one small private construction firm had vanished without trace, and three firms had no record of the student's ever having worked there.

iv) Second Telephone Follow-up, Group 1 only

An attempt was made to contact all Group 1 respondents by telephone early in 1973, six to eight months after their previous response. Of 114 attempted contacts, only 86, or 74%, were made, even with persistent telephoning over a period of five weeks. For six subjects messages were left for them to return our call, but the return calls were never made. Eight numbers given by subjects in their questionnaire or interview responses were no longer in service, two others were in use by other people, two subjects had moved out of the province, four had left home and their parents did not know where they had gone, and six had adopted unlisted telephone numbers.

During this telephone follow-up period further attempts were made to contact twenty-five of the Group 1 subjects who were known to be still in the area and who had not previously responded. This yielded completed questionnaires and interviews from a further twelve subjects.

2.3 b) Characteristics of Respondents by Group[a], including Comparisons with Non-respondents.

i) Biographic Information from Questionnaire (out of school students only)

Sex. Of the 126 respondents in Group 1, 74 (59%) were male, 52 (41%) were female. In Group 3, of the 360 respondents 237 (66%) were male and 123 (34%) were female. For all three groups, 64% of the respondents were male, 36% female. Since the ratio of males to females at the school in any one year varies from about 2:1 to about 3:2, in terms of sex the respondents were representative of the students as a whole.

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[a] For details of group composition, see p.7.

Age. The average age (mean) of respondents in Group 1 was 18.0 years, with little difference between the males and females (18.0 and 18.1 respectively). In Group 3, the average age (mean) was 20.1 years, with the average for boys being 20.4 years and for girls, 19.6 years. A wider age group was represented by Group 3 respondents (17 to 24 years, all ages represented) than Group 1 (16 to 20 years, with one 24 year-old). The modal age in Group 1 was 18, with 48% of the respondents: in Group 3 it was 19, with 30%. For all three groups combined it was also 19, with 24% of the respondents.

Marital Status. Thirteen percent of the respondents in Group 1 and seventeen per cent in Group 3 were married at the time of the survey. The youngest married male and the youngest married female were both seventeen years of age. The mean age of married males (all groups combined) was 20.2 years. For married females the comparable figure was 19.4 years. A significantly greater percentage of females than males in Group 1 and 3 separately, and in all groups combined, were married. The actual percentages are shown in Table 8.

Table 8

Marital Status by Group and Sex (percentages)

Marital Status	Group 1		Group 3		All groups	
	Male (N=74)	Female (N=52)	Male (N=232)	Female (N=123)	Male (N=316)	Female (N=184)
Married	7	23	10	30	9	28
Not married	93	77	90	70	91	72
Total	100%	100%	100%	100%	100%	100%

ii) Respondents and Non-respondents, Group 1 only, by Sex and Length of Time since Leaving School.

Of the 205 students who had left the school by the latter half of May, 1972, 130 were male and 75 female. Excluding the five males and four females who went on to the Adult Training Centre for educable retarded adults, questionnaires were sent to 125 males and 71 females. The females, therefore, comprised 36% of the total group. It can be seen in Table 9 that 73% of the females returned usable questionnaires, whereas the percentage for males was 59% (two unusable questionnaires were returned in this group, both from males). The fifty-two female respondents comprised 41% of the possible respondents in Group 1. Thus females were slightly over-represented in the group which formed the basis for all the analyses of Group 1 questionnaires. Where other studies have reported response rates by sex it has been usual for females to be over-represented (Pucel et al, 1971). The increased rate of response with recency of leaving school is also shown in Table 9.

Table 9

Respondents and Non-respondents by Sex and Length of Time since Leaving School (Group 1 only)

Period when left school	Sex	Total possible[a]	Usable Responses N	Usable Responses %
Before end of first year (June 1970)	Male	19	8	
	Female	8	3	
	Sub-total	27	11	(41)
End of first year to before end of second year	Male	40	17	
	Female	22	15	
	Sub-total	62	32	(52)
End of second year, to May 1972	Male	66	49	
	Female	41	34	
	Sub-total	107	83	(78)
All periods	Male	125	74	(59)
	Female	71	52	(73)
	TOTAL	196	126	(64)

[a] Excludes deceased students, students at Adult Training Centre, and two males who left school before June 1970, returned to school the following year, and were still there in May, 1972.

1969 Predictor Battery Scores. Since all 287 students in Group 1 wrote an extensive battery of predictor tests soon after entering the school, it has been possible to compare respondents and non-respondents on the "input" variables measured by the battery. Areas covered by the battery were scholastic antitude (non-verbal IQ), verbal, mathematical and gross motor ability, clerical antitude, mechanical reasoning ability, eye-hand coordination, vocational interests and occupational preferences (Lokan, 1971: Lokan and Halpern 1972; Isabelle and Lokan, 1972). The mean scores and standard deviations on all predictor variables were computed by sex for the following three comparison groups[1]:

(i) Questionnaire: Responded vs Did not respond

(ii) Interview : Interview held vs Interview not held (Questionnaire respondents only)

(iii) Interview : Interview held vs Interview not held (Both respondents and non-respondents to questionnaire)

In a large majority of cases the difference between means on each variable for the three sets of comparisons were obviously insignificant. About twenty t-tests were computed where the differences were larger in relation to their standard deviations. Only four t-values indicating significance at the 0.5 level or better were found. One of these showed that males responding to the questionnaire scored higher on the Object Drawing Test (included as a measure of eye-hand coordination) than non-responding males. Females who agreed to be interviewed also scored higher on this test than both the females in the total group who were not interviewed and the remainder

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[1] Complete tables of these results are too numerous to include in this report. They are available at the Research Centre of the Ottawa Board of Education.

of the females returning the questionnaire who were not interviewed. The remaining significant difference showed that females who agreed to be interviewed had a higher level of interest in the technical tasks included in the interest inventory than the females in the total group who were not interviewed. None of the significant differences was very large in practical terms, nor do the differences seem to be of much psychological value in describing the respondent/non-respondent groups. While many of the variables in the battery were useful predictors of later school success in both academic and shop courses, they were not generally predictive of who would respond to the questionnaire or interview and who would not. The absence of significant differences in reading level and IQ can perhaps be taken as an indication that we succeeded in constructing a questionnaire which would not be too taxing for the target group to fill in.

(iii) Respondents and Non-respondents by Award of Certificate of Training (Groups 1 and 3)

Although not one which can strictly be regarded as a student "characteristic", the variable award/non-award of a Certificate of Training (COT) will be considered here. With some reservations, it can be regarded as a measure of the attribute "successful" (the COT is awarded at the end of second year to students who have successfully completed the two-year occupational programme). The reservations arise because students whose academic work indicates that they have been misplaced in the school are encouraged to transfer to regular high schools. Therefore, although most students who leave the school without a COT have, in fact, not been successful, this is not necessarily the case. The most common times for transfers to be made, at least in the years covered by the present study[1], were during

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[1] Now that the occupational programme itself has been extended to a four year course leading to a diploma the situation is somewhat different, as there is more scope for the more able students in the longer course.

first term or after the end of second year. Since students in first year, 1969, who left the school before the end of first term were not included in the test validation sample (Lokan and Halpern, 1972), they were not included in Group 1 in the present study. The few who responded to the questionnaire were included in Group 2.

Some differences between Groups 1 and 3 in the percentages of respondents reporting that they were awarded COT's indicate that in Group 3, where little effort was made to trace non-respondents, those who did respond considerably over-represented students who succeeded in the school's programme. The numbers of students with or without COT's who transferred to other schools must also be taken into account here. In Group 3, one third of the respondents (120 in 360) transferred to other schools. Only 22% of these did so before obtaining their COT's. By contrast, in Group 1 (where the information is based on twice the proportion of potential respondents as in Group 3), only about one-fifth of the respondents (27 in 126) transferred to other schools, with almost 60% doing so before obtaining COT's. The situation for Group 1 students is complicated by two factors, the first being that a second occupational high school opened in the city in September, 1971, the second being that Highland Park High School introduced an extended programme, also in September, 1971. Whereas all of the transferees in Group 3 went to regular high schools, ten of the 27 transferees in Group 1 moved to the other occupational high school. Of these ten, four had COT's, six did not. The extension of the school's programme meant that many students who would no doubt have changed to regular high schools if they had been in an earlier cohort were able to stay on at Highland Park.

Considering the entire Group 1 cohort, for whom information on this variable was collected (both respondents and non-respondents), the following percentages for award/non-award of COT were computed. Of the eighty students

still at school in May, 1972, 76% (61) had COT's. Of the 196 students who had left the school, only 40% (79) had COT's. If all of the group transferring to other schools before obtaining COT's (16) were considered to be successful (probably an over-estimate, since some went to another occupational school), the percentage of successful students in the out-of-school group would rise to 48%. By combining the in-school and out-of-school groups, the maximum number of students who could be considered successful would be 156, or 55% of the total.

Of the 126 respondents in Group 1 who had left the school, 49% (62) were awarded COT's. (This figure rises to 62% if the 16 who changed schools before obtaining COT's are considered to have been successful). However, only 17 of the seventy non-respondents, or 24%, had COT's. Thus the out-of-school respondents in Group 1 were reasonably similar to the group as a whole on this variable, though considerably more successful than the non-respondents. No information was collected on the total number of students receiving COT's in the Group 3 cohorts. Among the respondents in this group, considering both students who transferred to other high schools and those who did not, a total of 258, or 72%, said they were awarded COT's. If the 25 students who changed schools before obtaining COT's were regarded as successful also, the percentage of successful respondents in Group 3 would rise to about 80%. Even without including these 25 students in the "successful" category it seems likely that a considerably higher proportion of the respondents from Group 3 were successful at the school than the actual proportion in the target population.

2.3 c) Shop Specialties Studied, and other School-related Information. School-related information, as distinct from attitudes toward school, collected in the questionnaire consisted of date of entry, length of time

spent in the school, shop specialties studied, award of Certificate of Training, and reasons for leaving the school. The proportions by group receiving a COT and leaving to go to another school were discussed in the previous section. The remaining information provided will be discussed here. All school-related information for Group 1 respondents was cross-checked with school files. Only information on shop specialties, where ambiguous, was checked for Group 3.

Time at School. The length of time spent at the school by group and over all groups is shown in Table 10.

Table 10

Length of Time Spent at the School, by Group (percentages)

Time Period	Group 1 (N=126)	Group 3 (N=360)	Total incl. Group 2 (N=505)
One term or less	1	7	5
Between one term and one year	7	8	8
One school year	10	25	21
Between one and two school years	26	15	18
Two school years or more	56	45	48
TOTAL	100%	100%	100%

Specialties Studied. During its first four years the school offered specialty training in twenty-three different shops. All these shops and a further two were also available as options (before 1971, not all shops were available to both sexes). A first-year student studied six shop courses, two in each of three terms. In second year he or she studied one of these six shops as his or her specialty, and three others as options. Group 1 students continuing in the school's extended programme will almost certainly have specialized in more than one shop by the time they leave school. The questionnaire for the out-of-school groups focussed on the shops studied as specialties; since these shops constituted the students' main areas of training, it was of interest to find out how many students were able to obtain jobs in areas directly related to their specialty training.

The percentage distribution of students in the various shop specialty courses is shown by group in Table 11 on the following page. It can be seen that a considerably higher proportion of out-of-school respondents in Group 1 had studied no shop specialty than had respondents in Group 3. This ties in with the greater proportion of unsuccessful students among the Group 1 respondents than for Group 3 (see previous section). The Group 1 students returning to the school for the extended programme have been considered separately, since most of them have studied more than one specialty.

Shop Specialty by Certificate of Training. In order to assess whether students studying some shop courses may have been more likely to graduate from the programme than others, distributions for each specialty by award/non-award of a Certificate of Training were prepared. In Group 3 the distribution was very much influenced by the large graduate:non-graduate ratio among the respondents (of the 293 students for whom shop specialty information

TABLE 11

Percentage of Students by Group in the Various Shop Specialty Courses

Specialty Course	Group 1 (N=126)	Group 3 (N=360)	Total, incl. Grp.2 (N=505)	Grps 1 & 2 in-school (N=94)
Art	3	2	2	3
Auto Body	6	6	6	19
Auto Service	5	4	4	15
Carpentry	5	3	4	1
Drafting	1.5	5	4	7
Dry-Cleaning	1	1	1	3
Electrical Repair	1	3	2.5	16
Food Services	2.5	6	5	2
Graphic Arts	3	4	3.5	10.5
Home Management	4	1	2	5
Horticulture	5	5	4.5	14
Hospital Care	4	5	4.5	5
Industrial Sewing	2.5	0.5	1	8.5
Instrumental Music	1	1.5	1	2
Machine Shop	1.5	3	3	8.5
Painting & Decorating	0	3	2	0
Personal Grooming	5.5	5	5	3
Retailing	1.5	4.5	4	8.5
Sheet Metal	1	3.5	3	7
Small Engines	4	4	4	7
Typing	7	8.5	8	14
Upholstery	2	0	1	7
Welding	4	4.5	4	15
No Specialty (or no information)	29	18	22	3
Total	100%	101%	100%	184%[a]

a) Most of the students remaining in the school in the extended programme studied more than one shop specialty, hence the percentage figure which is close to 200%.

was available, 254 (87%) obtained a COT), and probably does not present a realistic picture. For this group the COT's greatly out-numbered the non-COT's in all specialty areas except Industrial Sewing where they were equal, and Instrumental Music, where non-COT's actually exceeded the COT's. The distribution obtained for the out-of-school respondents in Group 1 for whom shop specialty information was available probably presents a closer approximation of the actual situation. In all but four specialty areas the number of COT's was close to the number of non-COT's. The four shops which produced noticeably more graduates than non-graduates were Typing, Personal Grooming, Upholstery and Welding.

Sex by Certificate of Training. Since females predominated in two of the above four specialty areas it seemed likely that females in Group 1 may have been more successful than males in gaining COT's. For the out-of-school respondents from Group 1, 46% of the males and 54% of the females obtained COT's. These percentages do not, however, indicate a significant difference. If the out-of-school non-respondents, apart from those who went to other schools before obtaining COT's, are included, these percentages become 38% and 44% respectively. With the students remaining in school included as well, 52% of the males and 48% of the females were awarded COT's.

Reasons for Leaving the School. The questionnaire included a list of seven of what the school's Guidance Head felt were the most likely reasons why students left the school. Respondents were advised to mark up to three reasons if applicable, and to indicate which of those they marked was the most important. In addition to the seven listed reasons there was a space for "Other - please specify". For all groups combined, only one per cent did not reply to this question. Forty-three per cent gave as many as two reasons, while only eight per cent gave a third reason. The actual reasons listed can be seen in Table 12, which shows the percentage distribution by

reason marked, by group. Table 13 shows the percentage selecting each reason as the most important reason for leaving school, by group.

It was expected that there would be differences between Groups 1 and 3 in reasons for leaving school. For reasons explained earlier (see p.34), fewer students from Group 1 would be expected to change schools or to leave because they had finished their school programmes. Since the respondents in Group 3 contained a considerably higher proportion of successful students (see p.35), it was expected that fewer of these would have left because they disliked school. Both of these expectations were borne out by the results. It was also thought likely that more students from Group 1 would have left because they had a job to go to, since current labour market conditions suggest that a suitable job opportunity should not be allowed to pass by without serious consideration. However, as can be seen in Table 12, the difference between the groups in percentages marking this reason is small. A somewhat larger difference between the groups (though still not quite significantly different at the .05 level) can be seen in Table 13, where more students from Group 1 are shown to have marked "having a job to go to" as the most important reason why they left school.

Among reasons specified under "Other" were the desire to work, the desire (as distinct from need) to earn some money, various health problems, lack of satisfactory progress, dissatisfaction with some aspect of the school's programme (e.g. "not enough gym", "couldn't get the shop I wanted"), wanting to do grades 11 and 12, the school rules, problems with teachers, and getting married. Among these, the most common were the desire to work, problems with teachers, and, in Group 3, the desire to do grades 11 and 12.

Table 12

Reasons for Leaving School, by Group (percentages)

Reason	% of all reasons given Group 1 (N[a]=178)	Group 3 (N=526)	All groups (N=753)
Had a job to go to	24	21	21
Changed schools	9	20	16
Left Ottawa	1	1	1
Finished school programme	6	29	21
Needed to earn money	11	7	8
Was asked to leave	4	3	4
Couldn't hack school	20	9	12
Other	25	10	17
Total	100%	100%	100%

[a] N refers to number of reasons, not number of students

Table 13

Most Important Reason for Leaving School, by Group (percentages)

Reason	Group 1 (N=126)	Group 3 (N=360)	All groups (N=505)
Had a job to go to	26	18	20
Changed schools	10	18	16
Left Ottawa	1	1	1
Finished school programme	2	28	21
Needed to earn money	11	4	6
Was asked to leave	5	3	4
Couldn't hack school	14	8	9
Other	25	18	20
No response	6	2	3
Total	100%	100%	100%

2.3 d) Employment Status, Salary, and other Job-related Criteria

The problem of what is the most meaningful criterion information to obtain in an evaluation study of the effectiveness of a work-training programme has been discussed by many writers. A common core of job-related criteria tends to appear in most follow-up studies, however. These criteria consist of the nature and extent of employment, and related objective performance variables such as length of stay on jobs, hours worked per week, promotions and remuneration. Sometimes less objective variables such as employer ratings of performance are also incorporated in the study. A comprehensive discussion, including many references, of the merits of these criteria has been given by Freeberg and Reilly (1971). Their discussion, however, goes considerably beyond these more usual criteria to incorporate attitudinal variables such as vocational and personal-social adjustment, and motivational variables such as attempts at further schooling, attempts to obtain jobs if unemployed, and degree of concern with various characteristics of jobs. Vocational planning skills are also considered to be important, and were assessed in Freeberg's study through questions concerning short and long term occupational goals, and the extent to which the subjects had saved money since leaving the training programme.

The present study used Freeberg's and Reilly's discussion of meaningful criteria as a guide, along with the stated objectives of the occupational programme and discussions with members of the Guidance Department at the school whose former students were being followed, in determining what criterion data should be collected. Some of the suggested attitudinal and motivational variables were included, as well as the more common factual ones. Results from the attitudinal questions will be presented in Section 2.3 e, while the results from the factual questions will be given here. As has been

pointed out in an earlier section (Section 1.1) of this report, the present follow-up study cannot be an evaluation of whether the occupational programme has achieved "what ought to be" for its students. Rather, the study is a comprehensive documentation of "what is".

(i) Employment Status. The employment status of respondents by group at the time of completing the mailed questionnaire is shown in Table 14. Probably the most important figures to examine in this table are the percentages of respondents looking for work. In Group 1, which has been shown to be more representative of the over-all student body (see p.35), 25% of the respondents reported that they were looking for work. In Group 3, which has been shown to contain an over-representation of successful students, 11% were looking for work. With the numbers of students not working adjusted for overlapping categories (for example, some students marked that they were both "not employed, looking for work" and "keeping house"), forty-four subjects (35%) in Group 1 and sixty-eight subjects (19%) in Group 3 were unemployed. Both the studies done by Stennett (c.1969) in London, Ontario, and Reich and Zeigler (1972) in Toronto, found that 27% of their respondents were not working. Stennett's report does not specify how many of his unemployed respondents were looking for work; Reich and Zeigler quote a figure of 18.6% who were actively seeking work. Government figures for average annual unemployment rates (where the unemployed are considered to be those registered as looking for work) in Ontario for the 14 - 24 age group in 1968, 1971 and 1972 are 6.6%, 10.0%, and 9.0% respectively (Stat.Canada, 1973). In terms of these statistics and the findings of Reich and Zeigler's study the figure of 25% of Group 1 respondents looking for work in our sample seems unusually high. Given that the corresponding percentage of the more successful Group 3 students was considerably lower, resulting in a combined figure of 15% across all groups,

Table 14

Employment Status by Group, Mailed Questionnaire

Status	Group 1		Group 3		All groups, incl. Grp. 2.	
	N	%	N	%	N	%
Working[a]: full-time	52	(41)	193	(54)	256	(51)
part-time	11	(9)	40	(11)	53	(11)
Sub-total	63	(50)	233	(65)	279	(62)
Not working[b]:						
Still at school	16	(13)	82	(23)	100	(20)
Keeping house	9	(7)	33	(9)	45	(9)
Looking for work	32	(25)	40	(11)	75	(15)
NOT looking for work	5	(4)	9	(3)	15	(3)
Other	4	(3)	25	(7)	29	(6)
	66	(52)	189	(53)	264	(53)
No response	7	(6)	3	(1)	10	(1)
Total Percentage[c]		108%		119%		116%

[a] Categories are mutually exclusive

[b] Categories NOT mutually exclusive

[c] Exceed 100% for reason given in footnote b) above, and because several students still at school were working part-time.

it seems possible that the respondent group in the Toronto study also contained a greater proportion of generally successful subjects. The wider variety of employment avenues in a large urban area like Toronto could also have had some bearing on the different findings.

Despite the proportions of subjects unemployed at the time of completing the questionnaire, only 17 Group 1 respondents (14%) and 17 Group 3 respondents (5%) reported that they had never held a job since leaving school. Of 90 students interviewed from each of Groups 1 and 3, only 5 in each group had never worked, though 36 students in Group 1 and 29 in Group 3 were not working at the time of the interview.

Of the 85 respondents in Group 1 who were successfully contacted during the second follow-up six to eight months later, only 49 (58%) were employed when they completed the questionnaire. Almost half of those who were not working were not looking for jobs, either because they were at another school or were married (females). At the time of the second follow-up, only 26 of the 49 subjects held the same job or had been promoted with the same firm. Of the 23 who had left their jobs, three had returned to school and fifteen were working in other jobs. Sixteen of those unemployed at questionnaire time were working at the time of the second follow-up, when only eleven subjects said that they were looking for work. Altogether, 57 (67%) of the 85 subjects were working at this time.

Employment Status, Sex and COT. In Group 1, 27 (37%) of the 74 male respondents who had left school and were not attending another school were unemployed. One third of these were awarded COT's while at school. Similarly 33% of the female respondents were not working. More than two fifths of these had COT's. The possession of a COT probably helps its holder to obtain employment, but it is certainly no guarantee that he or she will find work. Since most of the

respondents in Group 3 had COT's, comparable percentages were not computed for this group. Excluding students who were still attending other schools at the time of completing the questionnaire, 15% of the males and 37% of the females in Group 3 were not working.

Employment Status, Marital Status and Sex. It has already been seen (p.29) that a relatively small proportion of the questionnaire respondents were married. Almost 80% of the married males were working, mostly in full time jobs. Only about 40% of the married females were working, all but two of them in full time jobs.

Employment Status of in-school Group. The Group 1 and 2 students still in school in May, 1972, were asked if they currently held part-time jobs. Forty-five of 92 students replied in the affirmative. Only one quarter of these said that the jobs were related to their shop specialty work.

(ii) Types of Jobs Held by Questionnaire Respondents

A general classification of the jobs held by respondents at the time they completed the questionnaire was prepared, and is shown in Table 15. An attempt was made to classify respondents' jobs according to the Canadian Classification and Dictionary of Occupations (CCDO)(Canada Dept. of Manpower & Immigration, 1971), but because a large number of respondents had either used a single inadequate word to describe their jobs or else had merely named the firm with which they worked, this more precise classification was abandoned in favour of the less precise one shown in the table. Codes from the CCDO were assigned to the jobs held by subjects who were interviewed, since these jobs were described in a little more detail. The distribution of jobs by CCDO Code, together with a brief description of the CCDO itself, will be given later in this section of the report.

It can be seen from Table 15 that holders of COT's obtained jobs in a slightly wider range of categories than did students without COT's. Generally,

Table 15

Type of Job by Award of COT and Sex, Questionnaire Respondents, all groups.

Type of Job	Male		Female	
	COT	NO COT	COT	NO COT
Apprentice, various (excl. hairdressing)	26	3		
Appliance, equipment repair	6			
Armed forces	3	1		
Auto motive (excl. gas bar, appr. mech)	8	4		
Building maintenance, cleaning, custodian	7	1	2	2
Construction work, incl. heavy machinery operation	8	3		
Data processing	2	1	1	
Domestic (housekeeper, babysitter)			2	4
Factory work	1	1	7	2
Farming, fishing	1	2		
Florist, landscaping	3		1	1
Food services (incl. waitress, dish-washer)	7	2	5	3
Gas bar, car-wash attendant	3	2		
Hairdressing	1	1	8	2
Labourer, general	8	7		
Laundry/Dry Cleaning	1	2	1	
Nursing Assistant, Orderly, Ambulance attendant	4	1	7	
Services, misc. (incl. elevator operator, porter, delivery driver)	15	4	2	
Sports	3			
Stock rooms	5	3		
Stores (sales, display)	10	3	4	3
Technical, not apprentice	7			
Transportation	3	2		
Typing			10	2
Upholstery, furniture repair	3	1		
White Collar, general (excl. typing, stockrooms; incl. cashier)	11	9	11	5
TOTAL	146	53	61	24

males were concentrated in apprenticeships, automotive jobs (mostly servicing and body work), construction and general labouring work, sales and miscellaneous services, and low level white collar jobs. Females were concentrated, relatively, in factory work, food services jobs, hairdressing, nursing, typing, and low level white collar jobs. The table does not provide a complete inventory of all jobs held by respondents who were working, since some respondents, especially those working part-time, neglected to supply any details of their jobs, and a few cases defied classification (e.g. "presser", which is probably factory, but could be dry cleaning).

(iii) Relationship of Specialty Training to Current Job

The degree of usefulness of their shop training in the jobs held by respondents at the time of returning the questionnaire is shown by group in Table 16. About 40% of the respondents found that their training had been no use at all in their present jobs.

Table 16

Degree of Usefulness of Specialty Training on Current Job, by Group (percentages)

Usefulness	Group 1 (N=70)	Group 3 (N=233)	Total incl. Grp. 2 (N=313)
No use at all	39	42	41
Not much	18	13	14
Quite a bit	16	20	19
Very useful	27	25	26
TOTAL	100%	100%	100%

Over half found their training to have been of little or no use. This is an unfortunate, but all too familiar, finding in follow-up studies of

occupational or vocational programme students. Stennett (c. 1969) found percentages ranging from about 35% to about 75% in various categories of students who found their high school training had been of little or no use in preparing them for employment. Reich and Zeigler (1972) found that 52% of the students had obtained employment related to their training, but doubted that much of this could be attributed to the schools since most of these students were females who found work in Clerical and Sales fields (fields which are traditionally open to women). McCowan and Mongerson (1971) reported that only 43% of their respondents were employed in positions classified as being in the same field as that for which they were trained. A further 15% were employed in related areas. Little (1970), in his review of follow-up studies, quotes several with similar findings, though a few reported as many as 80% of their subjects finding employment related to their training (these were usually studies of students with post-secondary technical education). Obviously this is a problem of which planners of vocational training programmes in general must remain constantly aware, so that some attempts can be made to adjust courses to the supply and demand of the local employment market. Another possibility, which was mentioned by a few employers in their interviews, is to train students for clusters of related job areas, rather than concentrating on single areas of specialty. In the four year occupational programme this becomes more of a realistic possibility, and the planners of occupational/vocational curricula in Ontario have recently been moving in this direction.

Because of its potential interest for teachers in occupational schools, a breakdown of the rated usefulness of training by specialty area is included here, in Table 17. This table includes only employed subjects from all groups who had studied a shop specialty area at the occupational school involved in the study.

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[1] Personal communication from Mr. B. B. Denyes, Program Consultant, Region 10, Ontario Ministry of Education.

Table 17

Usefulness of Training on Current Job, by Specialty Area, all groups.

Specialty Area	Degree of usefulness			
	No use	Not much	Quite a bit	Very useful
Art	2	3	1	0
Auto Body	5	3	4	7
Auto Service	9	2	4	2
Carpentry	5	2	1	3
Drafting	4	0	3	3
Dry Cleaning	1	1	0	2
Electrical Repair	4	2	2	1
Food Services	9	4	1	4
Graphic Arts	2	0	4	6
Home Management	2	2	1	0
Horticulture	6	1	0	4
Hospital Care	4	3	3	6
Ind. Sewing	1	0	2	0
Instr. Music	3	0	1	0
Machine Shop	5	1	1	1
Painting & Dec.	3	2	3	1
Personal Grooming	6	0	3	10
Retailing	3	1	1	5
Sheet Metal	4	2	2	3
Small Engines	5	2	1	5
Typing	10	1	6	7
Upholstery	0	0	0	2
Welding	8	2	2	3
TOTAL: N	101	34	46	75
(%)	(40)	(13)	(18)	(29)

(iv) Other Job-related Information from Questionnaire

Slightly more than 60% of the respondents in each group had found their first jobs either immediately or within a month of leaving school. Of those who eventually found jobs, only about 10% needed more than three months to do so. Almost 30% of the students said they found the jobs themselves. Twenty-two per cent obtained their first jobs through relatives or friends, 11% through the work experience programme, and 10% through someone at the school. Only 3% located their jobs through newspaper advertisements. The remainder either marked "other", or did not respond to this question. Only four per cent of the subjects in all groups held more than one job at the time they returned their questionnaires. Of those employed, 87% were working more than thirty hours per week, with four per cent working 21 - 30 hours, five per cent working 11 - 21 hours, and three per cent working 10 hours or less.

The percentages of students reporting that they have held various numbers of full- and part-time jobs since leaving school are shown for all groups combined in Table 18. Differences in percentages between groups were negligible.

Table 18

Percentage Distribution of Numbers of Jobs Held, all Groups Combined

Number of Jobs	Full-time (N=505)	Part-time (N=505)
0	24	58
1	31	18
2	24	9
3	10	6
4	5	4
5	3	2
6	1	1
7	1	1
8	0	0
More than 8	1	1
TOTAL	100%	100%

As a rough index of their vocational motivation, the students were asked on the questionnaire whether they had undertaken further training since leaving school. Over all groups, twenty-eight percent responded that they had. However, there was a significant difference between Groups 1 and 3 on this variable, as only 14% of Group 1 students had taken further training compared with 33% in Group 3. It is likely that the students in Group 3, who were more generally successful while at school, were more highly motivated to take additional training. A further factor which probably had some influence on these percentages was the longer time most of the Group 3 students had been out of school.

(v) CCDO Major Code Groupings of Jobs Held by Respondents Interviewed.

The Canadian Classification and Dictionary of Occupations (CCDO) (Dept. of Manpower and Immigration, 1971) was prepared to provide a systematic classification of occupations in Canada. More than 6,700 occupations have been classified according to 23 major groups, 81 minor groups and 486 unit groups. Occupations are grouped according to "a desirable degree of homogeneity with respect to 'kind of work performed' as determined by analysis of the duties and tasks of the constituent occupations". The CCDO codes also contain the levels of worker involvement with Data, People and Things for each job, defined as they are in the Dictionary of Occupational Titles (DOT) (U.S. Dept. of Labor, 1966). Occupational characteristics such as training time requirements, in terms of General Educational Development (GED) and Specific Vocational Preparation (SVP) have also been coded in a similar way to the codes used in the DOT. In the major and minor group codes, however, there are many differences between the CCDO and the DOT schemes, making comparisons between studies using the two schemes difficult. Reich and Zeigler (1972), for example, used the DOT classification. Since the CCDO scheme was used for the 1971 Canadian census data, it seemed

desirable in the present study to classify occupations according to the CCDO codes. This will enable comparisons to be made between the employment patterns of the follow-up subjects and other groups of similar-aged workers in various regions as the census reports become available.

The numbers of students interviewed holding jobs in the major CCDO groups at the time of the interview are shown by sex in Table 19. The GED and SVP levels for those jobs which were described in sufficient detail by the students for the appropriate codes to be determined (about 75% of the jobs) were tabulated. GED refers to education of a general nature which does not have a recognized specific occupational objective: it can be derived from experience as well as from schooling, and is specified in terms of six levels. The first four levels, ranging from applying "common sense understanding to carry out simple one- or two-step instructions" to applying "principles of rational systems to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists"[1], were represented in the jobs held by the interview respondents. Fifteen per cent held jobs with a required GED level of 1, 21% were level 2, 40% level 3, and 16% level 4. The SVP levels refer to the amount of time needed to acquire the information, techniques, and skills needed for average work performance in a specific occupation. It does not include orientation training required of a worker who is otherwise already qualified. The levels specified range from "short demonstration only" (level 1) through "over 10 years" (level 9). In this study the highest level represented was "over 2 years up to and including 4 years" (level 7), for apprenticeships. The percentages

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[1] For more complete descriptions of the levels the reader is referred to the CCDO, Vol.1, p.1162.

Table 19

Distribution of Present Jobs by CCDO Major Group Code for Subjects Interviewed, by Sex

Code	Definition	Male	Female
11	Managerial, Administrative and Related Occupations	0	1
21	Occupations in Natural Sciences, Engineering, etc.	1	0
23	Occupations in Social Sciences and Related Fields	1	0
31	Occupations in Medicine and Health	3	5
33	Artistic, Literary, Recreational and Related Occupations	1	4
41	Clerical and Related Occupations	10	13
51	Sales Occupations	8	1
61	Service Occupations	18	17
71	Farming, Horticultural and Animal Husbandry Occupations	4	0
81/82	Processing Occupations	1	0
83	Machining and Related Occupations	1	0
85	Product Fabricating, Assembling and Repairing Occupations	10	1
87	Construction Trades Occupations	12	0
91	Transport Equipment Operation Occupations	2	0
93	Materials Handling and Related Occupations n.e.c.	5	0
95	Other Crafts and Equipment Operating Occupations	3	0
99	Occupations Not Elsewhere Classified	0	1
	TOTAL	80	43

of jobs held by level are shown in the following table. The predominance of jobs in levels 2 and 3 is supported by the findings from the employer interviews (see p. 73).

Table 20

Percentages of Present Jobs held, by SVP Level, for Subjects Interviewed

Level	Description	% of subjects (N=93)
2	More than short demonstration, up to and including 30 days	25
3	Over 30 days, up to and including 3 months	26
4	Over 3 months, up to and including 6 months	13
5	Over 6 months, up to and including 1 year	16
6	Over 1 year, up to and including 2 years	12
7	Over 2 years, up to and including 4 years	8
	TOTAL	100%

(vi) Salaries

Information concerning salaries on the respondents' first and present jobs was sought during the personal interview. To maximize accuracy in the responses, provision was made to record the rates of pay either as hourly, weekly or monthly rates, depending on how the respondents stated them. The stated rates were later converted to rates for the same time period during the computer processing of the data. The numbers of students stating hourly or weekly rates were about the same; less than ten percent stated monthly salary rates. Although many of the subjects were in service occupations, less

than five per cent regularly received tips. Where tips or bonuses were received, the stated amounts were included in the computations of salary rates. Only salaries earned by respondents working thirty or more hours per week were included in the analyses. This eliminated eleven subjects from the analyses of salaries earned on first jobs after leaving school, and five from the analyses for present jobs. Including part-time jobs, the mean number of hours worked per week on first jobs was 41.1 hours, and on present jobs was 40.6 hours.

The average full-time weekly salaries on first jobs and on present jobs are shown by award/non-award of Certificate of Training for Groups 1 and 3, and for all groups combined, in Tables 21 and 22. In no case did the respondents with COT's earn significantly more, on average, than respondents without them. The relatively low salaries paid some apprentices (especially hairdressers), almost all of whom hold COT's (see Table 15), may have been a governing factor here. It was expected that, due to effects of inflation, Group 1 subjects would have had higher average earnings on their first jobs than Group 3 subjects, most of whom had been out of school longer. However, this did not prove to be the case, as can be seen in Table 21. By comparing the figures in Tables 21 and 22, the generally higher level of salaries on present jobs than on first jobs can be seen (the over-all difference was significant at the .05 level). The average salaries on first jobs found in this study are quite similar to those found for occupational graduates in Toronto in February of 1971 by Reich and Zeigler (1972). The average salaries on present jobs in the present study are somewhat higher than those in the Toronto study, and considerably higher than the over-all average of less than $70 per week found in London, Ontario, in 1968 (Stennett, c. 1969).

Since quite a few subjects on weekly salaries reported working

Table 21

Average Weekly Salary on First Job, by Group and COT

	Group 1		Group 3		All groups	
	N	Av.sal.	N	Av.sal.	N	Av.sal.
COT	(33)	$81.26	(35)	$73.56	(72)	$76.17
No COT	(26)	$67.70	(7)	$73.86	(36)	$70.42
All	(59)	$75.28	(42)	$73.61	(108)	$74.25

Table 22

Average Weekly Salary on Present Job, by Group and COT

	Group 1		Group 3		All groups	
	N	Av.sal.	N	Av.sal.	N	Av.sal.
COT	(29)	$87.25	(51)	$103.39	(80)[a]	$97.53
No COT	(21)	$91.02	(6)	$106.62	(27)[a]	$94.48
All	(50)	$88.83	(57)	$103.73	(114)[b]	$95.38

[a] Does not include Group 2

[b] Includes Group 2

fifty or more hours most weeks, salary rates computed on an hourly basis were also analysed. The over-all average hourly rate was found to be $2.25, the average for males being $2.49 and for females, $1.84. Two thirds of the subjects earned less than $1.80/hr. on their first jobs. The highest hourly rate reported was $6.00 (a music teacher) and the lowest was 55¢ (a carnival assistant). Construction workers and painters, as a group, earned the highest hourly rates (close to $4.00 an hour, on average). Housekeeper/babysitters and apprentice hairdressers usually earned less than $1.00 an hour. Roughly two thirds of the employed respondents considered their pay enough in relation to their experience, abilities and training (a few thought they were overpaid). When asked what they thought their rates of pay would be in a year's time if they stayed on the same job, almost a half of the subjects nominated rates that were 10% or more higher than their present rates, about a fifth expected increases of less than 10%, a sixth expected their rates would be unchanged, and the remainder did not know.

There were many other obvious sex differences in rates of pay apart from those mentioned in the preceding paragraph. Average weekly salaries on present jobs were therefore computed separately by sex and COT for each group, and are shown in Table 23. No matter what comparison one makes, whether it be by group, COT, COT within group (apart from the one instance where the standard deviation is undefined), or over-all, the males were earning significantly more than the females at the time the interviews were conducted. This has also been a familiar finding in other studies.

(vii) Other Job-related Information from Interview

Job Stability Information relating to job stability is shown for the students interviewed in Table 24. It is obvious that, as a group, these subjects changed jobs rather frequently, and their job stability leaves

Table 23

Average Weekly Salary on Present Job, by Group, COT and Sex

Group	Sex	Male N	Male Av.sal.	Female N	Female Av.sal.
1	COT	(15)	$97.80	(14)	$75.90
	No COT	(14)	$102.32	(7)	$68.43
	All	(29)	$100.00	(21)	$73.42
3	COT	(34)	$115.09	(17)	$80.00
	No COT	(5)	$114.44	(1)	$67.50
	All	(39)	$115.00	(18)	$79.30
All groups	COT	(49)[a]	$109.78	(31)[a]	$78.15
	No COT	(19)[a]	$105.51	(8)[a]	$68.31
	All	(72)	$107.49	(42)	$74.63

[a] Does not include Group 2

much to be desired. Of the 85 respondents in Group 1 who had had at least one job since leaving school, only 14 (16%) remained in that job. Of the 85 in Group 3, only 24 (28%) held the same job.

Reasons for leaving First Job. Nine possible reasons why respondents may have left their first jobs were included in the interview form, together with a space for "Other". Respondents were instructed to mark as many as applied. The percentages of all reasons given for each reason are shown by group in Table 25. About a quarter of the students did not respond to this question, about a fifth gave two reasons and about 7% gave three reasons. It can be seen that approximately 15% of the respondents reported that they left their first jobs for reasons beyond their control. However, a substantial majority of them left because of dissatisfaction with some aspect of the job. Given the more favourable ratings in the questionnaire of satisfaction with present jobs (see p. 64) it seems likely that many respondents may have needed to sample several jobs before finding one that suited them at least reasonably well.

In the second follow-up of Group 1 students, which was conducted about six months after the interview, it was found that a considerable number of the subjects had made further job changes (see p. 45). Of the 23 subjects who had left the jobs they had at the time of the interview, six were laid off, three left to go back to school, two found better jobs, three left for health reasons, and the remaining nine cited dissatisfaction with some aspect of their jobs (usually low pay).

Promotions and Pay Raises. Just over one quarter of the respondents reported that they received raises in pay on their first jobs. On their present jobs, 49% of the males and 44% of the females who were working said they had received pay raises. The jobs held by 11% of the employed males and 9% of

Table 24

Job Stability of Interview Respondents, by Group

Item	Group 1	Group 3
No. of subjects whose present job is same as first job.	14	24
Median length of time on first job (months)	3.5	3.1
Median length of time on second job (months)	2.5	3.8
Median length of time on present job (months)	4.8	12.8
Median no. of months out of work since leaving school	3.8	6.1
Mean number of jobs held	3.1	3.0

Table 25

Reasons for Leaving First Job, by Group (percentages)

Reason	Group 1 (N=69)[a]	Group 3 (N=73)[a]
I left to go back to school	6	10
I was promoted	0	0
I was laid off because there wasn't enough work	17	10
I was laid off because the firm went out of business	3	1
I left to look for a better job	26	14
I was discharged or fired	6	8
I didn't like the work I had to do	13	10
I didn't get on with the boss	10	5
I didn't like the working conditions	19	23
Some other reason	0	19
TOTAL	100%	100%

[a] refers to number of reasons given, not number of students

the employed females involved supervision of other workers. It will be seen in a later section (see p. 76) that few of the positions held by respondents whose employers were interviewed were felt to have little possibility for advancement, and that many employers offered material assistance to employees wishing to improve their qualifications. Thus, provided that he stays with his job, an occupational programme student should be able to achieve regular pay raises and promotions in most areas of employment.

(viii) Indices of Motivation and Vocational Planning

Several criteria in this category, which were considered by Freeberg and Reilly (1971) to be important variables in a follow-up evaluation study of a youth-work training programme carried out in several U.S. cities, were included in the present study. The findings on the variables included are summarised briefly here for all groups combined.

1) 36% (68) of the respondents interviewed attended another high school after leaving Highland Park. A quarter of these studied one specific shop, a quarter studied several shops, a quarter studied a commercial course, and the remaining quarter studied academic programmes. Two thirds attended the other high school for more than one year.

2) 21% (41) of the respondents interviewed undertook further training in programmes other than regular high school programmes. Approximately a quarter of these respondents studied at night school, 40% studied at special schools (Business, Nursing, Beauty, Algonquin College), and 7% undertook Manpower retraining courses. The remainder took on-the-job training or marked "other" in response to this question.

3) Only 15% of the subjects interviewed said that they would not take further training even if it meant they would be able to get a better job.

4) Of the 127 subjects working at the time of the interview, 46% reported that they had saved money out of just about every pay, 18% had saved money off and on, and 36% said they had just about nothing saved.

5) Of the 178 subjects who responded to the question, approximately one quarter had no idea what kind of work they planned to be doing in five or ten years' time. Seven per cent planned to be housewives, 16% said that they would have the same job as they had at present, and 46% gave a definite choice of work which was different from the job they had at the time of the interview.

6) When asked how they would implement their plans, 45% either did not know or did not respond. Eleven per cent said they would go back to school, 18% said they would take extra training other than school, 11% said they would work their way up in the same firm or department, 8% named a specific firm or department other than their present place of employment, and the remainder said they would achieve their plans through their own efforts.

(ix) Sources used by Subjects in Finding Work

Most of the subjects who were unemployed for some of the time since they had left school reported that they had been looking for work for most of the time. Subjects not looking for work were usually married females, were still at school, or had health problems. In response to the open ended question "When you are looking for work, what persons or agencies do you go to for help?", the replies shown in Table 26 were given. Almost three quarters of the respondents felt that there should be more help available for people who cannot find suitable jobs, though few had constructive suggestions as to the form this help might take.

Table 26

Sources used in Finding Work (all groups combined)

Source	% of responses (N=194)[a]
Dept. of Manpower, or Unemployment Commission	44
Other Government Dept.	2
Personnel Agency	6
Newspaper advertisements	12
Self	15
Friends, relatives, personal contacts	14
School placement, teacher, work experience programme; Board of Education placement, Algonquin placement	5
Other (incl. hospitals, Rehabilitation service, student employment service)	3
TOTAL	101%

[a] N refers to number of responses, not number of students.

2.3 e) Employment Attitudes - Students

The previous section considered responses to questions seeking information relating to the subjects' employment histories. However, in addition to knowing if a subject has a job, it is also important to know if he likes it. The questionnaire included two items relating to the subjects' satisfaction with their jobs. One asked directly how much the job was liked, the other encompassed work satisfaction in an overall rating of whether the subject felt he had been successful since he left school. Responses to these questions, and to the ten "work values" questions in the interview, will be discussed here.

Satisfaction with Present Job. Of the 315 respondents from all groups who were working, slightly more than half (52%) were very satisfied with their present jobs. Another quarter were quite satisfied. The remaining quarter were either not very satisfied or not at all satisfied (only 4% fell in this category) The percentages by group differed very little from these figures (the biggest difference was 2%). Of those who were very satisfied or quite satisfied with their jobs, 75% in Group 1 and 85% in Group 3 expected to stay on the same jobs for at least another year. Of those who were not satisfied only 30% in Group 1 and 33% in Group 3 expected to be in the same job a year later.

Self - Rating of Over-all Success. A significant difference was found between Groups 1 and 3 in the percentages of students rating themselves as successful, with 69% successful in Group 3, and 56% successful in Group 1. About ten per cent of the respondents in each group either did not answer this question or said they couldn't decide. The significantly higher percentage of respondents considering themselves successful in Group 3 was perhaps to be expected, given the over representation of successful students (in terms of award of COT's) in this group (see p.35).

Job Satisfaction and Rating of Over-all Success. Of those respondents rating themselves as successful since leaving school, 88% in Group 1 and 90% in Group 3 either liked their work quite a bit or liked it very much. Of those either undecided or rating themselves as unsuccessful, about 40% in each group liked their work. It would appear that job satisfaction may have been an important factor in determining whether or not they felt successful. Only about a half of those satisifed with their jobs in each group found their shop specialty training to be moderately or very useful. On the other hand, about 80% of those who were dissatisfied with their jobs in each group found that their specialty training was of little or no use to them. The comment was sometimes made during interviews that the student had been led by the school to believe he could obtain a job in his specialty area, but he had not been able to do so. Many realised, realistically, that they would need more training in order to be employed in a trade area at a skilled level, and many were either taking further courses or planning to do so (see p.52). It seems likely that the lack of opportunity to use the shop skills developed at school contributed to job dissatisfaction.

Work Values. All subjects who were interviewed, whether employed or not, were asked to rate ten job aspects on a three point scale. The aspects listed were the following:

a) The chance to do interesting work
b) Getting paid what you're worth
c) Having steady work
d) Feeling like you're doing work that's worth doing
e) Having the chance to get promoted
f) Being able to make money fast
g) Not having to worry about getting fired
h) Having the feeling that no one is pushing you for more work than you can do
i) Having a nice place to work in
j) Liking the people you work with

All were considered to be important components of work which could influence an employee's satisfaction with his job. Seven of the ten aspects were used

in an "Awareness of Job Characteristics" scale by Freeberg and Reilly (1971), which these researchers considered to be an element of the student's vocational planning ability. In the present study they were used to sample the work values of a group of people who were mostly in unskilled or semi-skilled jobs. The remaining three items were adapted from Herzberg et al's (1959) job satisfaction scale. Since the question was posed as "How important is each of these things about a job to you?" rather than as "How satisfied are you with each of these aspects on your present job?", its function was to assess values rather than satisfaction.

The ratings were scored 3, 2 or 1 (1 = not important), and mean scores for each aspect were computed. Since an overwhelming proportion of the ratings assigned by the respondents were 3's (81%, with 13% 2's and only 6% 1's), there seemed to be little point in analyzing the ratings by subgroup, or in relation to any other variable. All ten aspects are apparently considered to be important, even allowing generously for response set. For the record, "Liking the people you work with" topped the poll with a mean score of 2.94, and "Being able to make money fast" trailed with a mean score of 2.36. Six items had mean scores between 2.75 and 2.90.

2.3 f) Information from Employer Interviews

Once they understood the purpose of the study, and of the interview in particular, the employers who were approached for an interview appointment were extremely co-operative. All but one agreed to be interviewed, and this remaining one, who originally had said he was too busy, eventually answered the questions over the telephone.

A number of questions in the interview sought background information on the nature of the firms involved in the survey. This was collected partly to provide a descriptive framework for the discussion of the follow-up

subjects' work performance. In addition, it was felt that detailed information of the kinds of firms in which its former students had found work would also be useful for the school, and of some interest to other occupational schools. Information was also sought on whether the employers had found that the occupational programme prepared its students well for jobs such as those held by the employees in the follow-up study. An open-ended question asking employers to suggest ways in which the occupational programme could be improved was also included. The two types of information collected will be discussed here under separate sub-headings.

(i) Information on Firms Involved in the Survey

All firms were located in, or very close to, Ottawa. Federal and provincial government departments, large and small stores, warehouses, manufacturing industries, service stations, large and small businesses, a university and an insurance company were among the establishments in which the subjects worked.

Size of Firm. A firm or department was classified as small, moderately small, intermediate or large according to the arbitrary criterion of whether it employed ten or less people, between 11 and 24 people, 25 to 100 people, or more than 100 people at the location where the follow-up employee worked. Thus, if a store had several branches, but only five people were employed in the location in question, the firm was classified as small. The percentage of firms in each size category is shown on the next page. Increases in numbers of employees at special times were not taken into consideration in determining the size category of the firm. Twenty-six of the seventy firms reported that extra staff were hired at special times, about half of these being during the summer, the rest during the winter or at holiday times.

Table 27

Percentage of Firms in each Size Category

Size Category	No. of employees	% of firms (N=70)
Small	10 or less	24
Moderately Small	11 to 24	20
Intermediate	25 to 100	24
Large	More than 100	30
No Response		2
	TOTAL	100%

Work Experience Programme. Thirty of the seventy firms reported that they currently accept students from occupational or vocational schools on work experience programmes. A further three have accepted them in the past, but no longer do so. Most employers accepting students felt that the scheme served a useful function, either for the students or the firm, or both. Nine of the employers not currently accepting students reported that they would be interested to do so. Two thirds of the firms accepting students for work experience at the time of the survey were intermediate or large firms, with the remaining third being equally divided between small and moderately small firms.

Minimum Starting Age for Employees. More than half (37) of the firms surveyed gave 16 years as the minimum starting age for employees in the firm. One gave 14 years, two gave 15 years, and four (all small firms) required prospective employees to be more than 18 years of age. The remaining firms gave 17 years and 18 years in about equal numbers. There was no obvious relationship between size of firm and required minimum age of 16, 17 or 18 years.

Encouragement of Further Qualifications. Each employer was asked whether he or she encouraged employees to improve their educational qualifications, and, if so, what form this encouragement took. Only nine employers gave a negative answer to this question, six of the nine being in the small size category, none being in the large category. Just over a quarter of the employers said they encourage their employees to improve their qualifications only if relevant to the job; the remainder gave an unqualified "yes". In many instances, however, the encouragement was verbal only. Almost all the large firms reported that a percentage of tuition fees (usually 50%, but sometimes as much as 100%) is reimbursed for successfully completed approved courses. One moderately small firm and one intermediate-sized firm had offered to pay for courses, but so far no employee had taken up the offer. Three small firms and four other moderately small firms reported material assistance for employees to gain better qualifications, sometimes through apprenticeship programmes. In all, almost half of the employers interviewed said their firms provided financial assistance of some kind for their employees to improve their qualifications.

(ii) Types of Jobs Held, and Adequacy of Students' Preparation

An informal classification of the jobs held by the 70 follow-up subjects whose employers were interviewed was prepared, based as far as possible on the descriptions used at the school for shop specialty courses. It was not always possible to link a job group with a specialty, however. The jobs are listed by category and corresponding specialty in the following table.

Table 28

Jobs held by Subjects whose Employers were Interviewed, by Job-type and Shop Specialty

Job Type	No.	Specialty Area
General white collar (e.g. messenger in govt.)	8	--
Janitorial	7	Building maintenance
Food services	7	Food services
Automotive	6	Auto body; Auto Service
Stock Rooms	6	Retailing and Merchandising
Technical Machine Shop	5	Welding; Sheet Metal
Typist	5	Typing and Office Practice
Nursing Orderly/Aide	4	Hospital Care
Florist, landscaping	4	Horticulture
Building construction	3	Carpentry; Trowel Trades
Hairdressing	3	Personal grooming
Printing	3	Graphic Arts
Housekeeping/babysitting	2	Home management
Store clerks	2	Retailing
House painting	1	Painting and decorating
Upholstering	1	Upholstering
Assembly line (electronics)	1	--
Playground supervisor	1	--
Theatre Usher	1	--
TOTAL	70	

This classification was prepared merely as a guide to the coverage of the various types of jobs which is provided in the school's over-all programme. Since the interview question on the adequacy of the job preparation provided by occupational programmes was asked (deliberately) in a general way, it would not be meaningful in this context to link a particular specialty with a particular job through a particular student. Some general observations, however, can be made from the employers' responses. In the opinion of the employers interviewed the occupational programme equipped students very well for jobs in horticulture and hospital care, and provided good training in the "basics" for typing, upholstery, some food services and some machine shop jobs. In general the preparation provided by the occupational programme for hairdressing, janitorial and general low level white collar jobs was felt to be poor. Of the seventy employers interviewed, only 29 (41%) said that the occupational programme prepared its students well for the types of jobs in question. Three of the remaining 41 did not respond; thirty-eight answered the question negatively. In the two open-ended questions where suggestions for improvements were sought or could be made, many valuable comments were offered. These will be discussed in a subsequent paragraph.

In assessing whether the occupational programme had prepared its students adequately for work, several employers said that they did not know any details of the school background of their employees. (The Ontario Human Rights Commission asks that only the grade level reached be required on a job application form, not the name or type of school[1]). Thus, it is probably true that many of those who answered the question concerning

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[1] The researchers were not aware of this point when the structured interview for employers was designed.

adequacy of job preparation were answering it with the specific follow-up subjects in mind. This in itself leads to ambiguity in interpretation of the employers' comments in some cases, since thirteen students, all from Group 3, attended regular high schools after they had been to Highland Park. However, whenever the people interviewed had definite knowledge of the occupational programme, they had genuine admiration for its aims.

A more formal classification of the jobs held by the 70 subjects was provided by categorizing the jobs according to the major job clusters in the CCDO (see p.51 for a brief discussion of these clusters). The distribution of jobs by cluster is shown in Table 29 below. The table is included so that the distribution can be readily compared with that of the entire group of students who were interviewed in person (see Table 19, p.54). No pronounced differences in types of job held by subjects from Groups 1 and 3 were found to exist, therefore only the distribution for the combined groups is shown.

Table 29

Number of Jobs by CCDO Major Group Code
for Subjects whose Employers were Interviewed

Code	Definition	No. of jobs
23	Occupations in Social Sciences and Related fields	1
31	Occupations in Medicine and Health	4
33	Artistic, Literary, Recreational and Related Occupations	3
41	Clerical and Related Occupations	14
51	Sales Occupations	3
61	Service Occupations	22
71	Farming, Horticultural and Animal Husbandry Occupations	2
81/82	Processing Occupations	1
83	Machining and Related Occupations	1
85	Product Fabricating, Assembling and Repairing Occupations	6
87	Construction Trades Occupations	5
91	Transport Equipment Operation Occupations	2
93	Materials Handling and Related Occupations n.e.c.	4
95	Other crafts and Equipment Operating Occupations	2
	TOTAL	70

Need for On-The-Job Training. To some employers, "adequate preparation for employment" may mean that the student can step in and undertake a job with a minimum of instruction; to others it may mean that the student has reached the level appropriate for beginning several years' apprenticeship. In the present survey, nine employers said that they give no training to employees on the job. A further seventeen mentioned brief orientation periods only, ranging from 30 minutes to two weeks. The question asked in the interview did not specifically refer to orientation, which meant that it could be interpreted ambiguously (if orientation had been mentioned, it is possible that most of the nine saying they gave no training would have named an orientation period for the job). However, the question was still able to reveal the number and nature of firms giving training more specialised than orientation. Where special equipment was involved, training periods varied from one week (Switchboard) to four or five years for printing, plumbing and welding apprenticeships. With apprenticeships excluded, most on-the-job training periods were in the interval of one to three months. Half of the jobs required the use of special equipment, but in only seven (10% of the over-all total) was knowledge of this equipment a pre-requisite for obtaining the job.

Suggestions for Improvements in the Occupational Programme. Suggestions for improvements in the occupational programme were made on both general and specific levels. Many employers felt, however, that one of the most crucial ways in which the students' preparation for work could be improved was probably largely outside the sphere of influence of the school. This was that the students' general attitude of indifference toward work and their failure to take pride in doing their work well should be remedied. Several employers commented that students should not assume that school credits were more important than experience, and that because they have

done some courses they knew all there is to know (comments which can usually be made about graduates from any programme, not just the occupational one).

On a more specific level, several employers thought that the work experience programme should be longer, to give more on-the-job practical experience, or that more use could be made of simulated situations in the school. Two employers suggested the use of films, to give students some familiarity with heavy equipment or machinery which could not actually be available at the school. Several employers in the service industries commented that the students need training in working under pressure (for example, in rush hour conditions), and that they seem to have had no training in functioning within a "chain-of-command" structure. On the more technical side, students need more training in reading blueprints, in estimating, and in working with new alloys. Training in taking adequate safety measures was stressed by many employers, whether it be when working with machinery or hot grease. Students also need much more training and practice in the paperwork associated with stockroom jobs, or with servicing jobs where work done must be itemized and observations recorded. Students in merchandising should know more about office routines, and orderlies should learn more tolerance for other people.

Specific suggestions concerning topics for possible training courses at occupational schools, in areas where employers felt there was a demand for personnel were "hospital housekeeping", "hotel housekeeping", maintenance of parks, recreation supervision, furniture refinishing (wood surfaces, as distinct from upholstery), housekeeping, care of handicapped children, a course for rental agents, and a course in microscope usage.

Although no question referred to it specifically, more than a quarter of the employers mentioned that students need training in preparing for interviews and in making applications for jobs.

(iii) Employer Rating of Work Performance

Only one question in the structured interview for employers related directly to the follow-up subjects' work performance. The employers were asked whether the subject always worked well, usually worked well, worked well enough but could have done better, didn't work well very often, or "other, please comment". Since some differences between Groups 1 and 3 existed which could have affected the ratings of work performance, these differences will be pointed out here. Firstly, at the time of the personal student interview, the 33 students from Group 1 whose employers were later interviewed had been on their present jobs for a median length of time of 7.0 months, while the corresponding group of 37 Group 3 students had been on the job for a median length of time of 15.0 months. By the time the employer interviews were conducted, thirteen subjects from Group 1 and fourteen from Group 2 were no longer working at the same firms. Those who had not changed jobs had been working for median times of 11.3 and 20.5 months in Group 1 and 3 respectively, by the time of the employer interview. Secondly, among the 33 Group 1 subjects, none transferred to other schools, and only 19 (58%) had Certificates of Training, whereas in Group 3 thirteen transferred to other schools and only one did not have a COT.

When ratings assigned in Group 3 are examined, it appears that transferring to another school had little effect on the students' later work performance. Within Group 1, however, it appears that obtaining a COT may have had some bearing on the quality of later work performance.

The distributions of ratings are shown by group in the following table. In the few cases where an employee had proved to be unsatisfactory, the employer looked on it as an individual situation which did not reflect on the school.

Table 30

Ratings of Work Performance, by Group

Group		Always worked well	Usually worked well	Worked well enough but could have done better	Didn't work well very often	Other
1: COT	(N=19)	8	6	3	2	0
non-COT	(N=14)	2	6	3	0	3
3: Other school	(N=13)	7	3	3	0	0
No other sch.	(N=24)	13	6	4	0	1

Work Performance and Job Type. The students who always worked well were spread throughout almost all the categories of jobs. Only in the area of auto servicing was there a shortage of good workers. In this category all but one subject were rated as "worked well enough, but could have done better".

Opportunities for Advancement, Job Type and Course Type. In almost all categories of jobs the employers considered that there were possibilities of advancement, through other kinds of jobs with the same firm, through being given more responsibility in the same kind of job, or, for government employees, through applying for posted positions. The housekeeper/baby-sitters and some of the janitorial jobs were exceptions to this. In the nurse's aide area and some food service jobs the only opportunity for advancement is in terms of pay raises, unless the subject undertakes further training.

The employers were also asked how the advancement rate and level of job entry of occupational graduates in their company compared with that of graduates from regular high schools. Twenty-five (36%) either did not know or said the question was not applicable in their firms. Three said occupational graduates, and two said high school graduates, had an advantage. The remaining 40 (57%) said entry level was equal and the advancement rate depended on the individual - school background made little difference.

2.3 g) Employment Attitudes - Employers

As has been seen in the previous section, the employers interviewed employed students in a wide variety of jobs. Each employer was asked a question which, in relation to the kind of job held by the employee we were following up, required him to rate the importance of thirteen employee characteristics on a three point scale. He was also asked to name the most and least important items on the list. (The characteristics included can be seen in Table 31). This could perhaps more appropriately be considered as an assessment of employer values rather than of attitudes.

Since the largest number of employees in any one job category was 8 and most categories had considerably less (see p. 70), it would not be meaningful to conduct analyses of the employer ratings on these characteristics by industry designation. However, it seems a reasonable hypothesis that differences might exist in the characteristics employers desire in employees working on jobs where contact with people is involved, as distinct from jobs where the employees work primarily with things or data. The 70 jobs held by employees whose employers were interviewed were therefore classified into "Involvement with People" and "Non-involvement with People" for the analyses of employer values. The classification resulted in 25 "People" jobs com-

prising all hairdressers, housekeeper/babysitters, store clerks and nurse's aides, and some typists (receptionists), florists (those with sales duties), food services workers (those who served rather than prepared food), some janitorial, one automotive and one white collar worker. The remaining 45 "Non-people" jobs covered the technical areas such as upholstery, printing, machine trades, building construction, most of the automotive and white collar jobs, the stock room jobs and assembly jobs.

The ratings given were assigned values of 3, 2 or 1 (3 = very important) and mean scores for each employee characteristic by the People/Non-people job classification were computed. These mean scores are shown in Table 31 below. The null hypothesis that no difference would be found in employer values between job-types could not be rejected, since t-tests showed none of the differences between means to be significant at the .05 level.

Table 31

Mean Employer Ratings of Employee Characteristics, by Type of Job

Characteristic	Jobs requiring contact with people (N=25)		Jobs not requiring contact with people (N=45)		All jobs (N=70)	
	Mean	Rank	Mean	Rank	Mean	Rank
Personal grooming and neatness (e.g. hair)	2.76	4	2.18	8	2.38	7
Kind of Clothing	1.92	11	1.67	11.5	1.76	11
Cleanliness	2.88	2	2.27	6	2.49	6
Cooperativeness	2.72	5	2.80	1	2.77	2
Good attitude toward work	2.96	1	2.75	2	2.83	1
Being on time	2.84	3	2.71	3	2.76	3
Willingness to work overtime	1.80	12	1.67	11.5	1.72	12
Initiative	2.40	9	2.24	7	2.30	8
Pleasant personality	2.52	7.5	2.09	9	2.24	9
Leadership	1.64	13	1.53	13	1.57	13
Ambition	2.24	10	2.04	10	2.12	10
Respect for authority	2.52	7.5	2.58	5	2.56	5
Ability to get along with others	2.68	6	2.62	4	2.64	4

Despite this lack of significant differences between job groups it is interesting to examine the rank ordering of the characteristics within the groups. By this criterion, items such as personal grooming and cleanliness assume more importance in jobs requiring contact with people than in jobs not requiring this contact. Cooperativeness assumes less importance. All other items are close together in rank. The over-all rank ordering is shown in the final column of the table. In general, for all jobs at the levels of those held by the respondents whose employers were interviewed, the most valued characteristics would seem to be good attitudes and work habits (such as being on time and respecting authority), and the ability to be cooperative with other workers. The least important employee characteristics for jobs at these levels would be such qualities as leadership, ambition and initiative, together with willingness to work overtime (though to two employers this was the most important factor) and kind of clothing. In rating "kind of clothing", several employers said that this was unimportant because a uniform was supplied for the job.

The percentages of employers selecting each employee characteristic as most or least important are shown in Table 32. Apart from the characteristics of cleanliness (more often selected as most important for jobs involving contact with people) and cooperativeness (more often most important for non-people jobs) the percentages were very similar for the two types of jobs. Only combined percentages, therefore, are presented in the table.

Table 32

Employer Selections of Most and Least Important Employee Characteristics (percentages)

Characteristic	Most important (N=70)	Least important (N=70)
Personal grooming & neatness (e.g. hair)	1	0
Kind of clothing	0	31
Cleanliness	7	1
Cooperativeness	11.5	0
Good attitude toward work	37	0
Being on time	16	1
Willingness to work overtime	3	33
Initiative	3	1
Pleasant personality	0	3
Leadership	0	23
Ambition	3	4
Respect for authority	7	0
Ability to get along with others	11.5	0
TOTAL	100%	97% [a]

[a] Does not add to 100% because of rounding, and one non-respondent.

2.3 h) Objectives of the Occupational Programme - Students, Employers, Teachers

In their follow-up study of former occupational high school students in London, Ontario, Stennett et al (c. 1969) found that the students regarded attitude development as the most important part of their training, with vocational training as next most important and academic training as least important. Four of the eight employers they interviewed also considered attitude training to be most important. In the present study these three global objectives of the occupational training programme and a fourth objective, the development of social skills (learning to get along with other people), were combined in a question and presented to three separate groups of people for rank ordering. Each student who had left school was asked in his interview to order the objectives according to how valuable each had been for him. Each employer was asked to order them according to how important each was for a student getting a job such as the student we were following had with the employer's firm. Teachers were asked to order them according to how important each is in the context of the school's over-all purpose of providing suitable education and training for a special student population. In all, 188 students, 70 employers and 56 of the school's 72 teachers responded to the question.

The results of the rankings assigned by the three groups of respondents will be presented in two ways. Firstly, the distributions of first preferences among the objectives will be examined. Secondly, the mean score for each objective, which was computed by assigning scores of 4,3,2, or 1 according to the degree of importance or value (4 = most important), will be considered. The distributions of first preferences by group are shown in Table 33. It is interesting to note that, by this criterion, the students felt that their academic training was more valuable than either their teachers

or employers did.

In discussing this, it should be pointed out that a few teachers commented on the artificiality of being forced to rank order objectives all of which were important, even if some were perhaps more important than others. It is also artificial to assign score values from 1 through 4 for rankings made, since this seems to imply that one objective is worth four times as much as another, and so on. This touches on an issue which has always been a problem in psychological measurement, a problem which has been far from solved. At least there is some research evidence (Guilford, 1954) that assigning score values such as 1 through 4 is no worse than other methods. Certainly, in the present study, the fact that three quarters of the teachers (even many of those teaching academic work) ranked training in academic subjects as third or fourth should not be taken to mean that they necessarily believe it is unimportant. The same may also be true of employers and students, though none of them commented to this effect.

In Table 34 the mean rankings by group are presented. As can be seen, results for the employer and teacher groups are strikingly similar, with favourable attitudes toward work and social skills assuming greatest importance. The student group, however, found their shop skill training to have been the most valuable. By this criterion also the students found their academic training to be more important than the employers or teachers ranked it.

Table 33

Percentage Distributions of Most Important School Objective, by Group

Objective	Students Groups 1 & 3 (N=188)	Employers (N=70)	Teachers (N=56)
Academic subjects	11	3	0
Shop skills	35	36	25
How to get along with other people	24	19	36
Development of favourable attitudes toward work	30	42	39
Total	100%	100%	100%

Table 34

Mean Ranks Assigned to School Objectives, by Group

Objective	Students (N=188)	Employers (N=70)	Teachers (N=56)
Academic subjects	1.96	1.29	1.32
Shop skills	2.80	2.63	2.68
How to get along with other people	2.54	2.77	2.89
Development of favourable attitudes toward work	2.65	3.13	3.14

2.3 i) Students' Attitudes toward Highland Park High School

A global assessment of the out-of-school students' feelings about the school was obtained on the questionnaire, in the form of a single question asking them if they were glad they had attended the school. Space was also provided for comments. In Group 1, 74% (93) of the respondents were glad they had attended the school, 16% were not glad, 7% were glad in some ways, but not in others, and 3% did not respond. Of those who were glad they had attended, only 53% obtained Certificates of Training, and 62% felt that they had been successful since leaving school. In Group 3, 78% (280) of the respondents were glad they had attended the school and 15% were not. The remaining 7% either were not sure or did not respond. Of the 280 students who were glad they had gone to the school, 78% obtained COT's and 81% felt they had been successful since leaving school. The higher percentages in Group 3 than in Group 1 are probably a reflection of the over-representation of successful students among the Group 3 respondents. Of the students who were working, 87% of those in Group 1 who found their shop training useful in their job (30) and 78% who found their shop training not useful (38) were glad they went to the school. In Group 3, 95% of the 104 who found their school shop training useful in their jobs, and 40% of the 125 who found their training not useful, were glad they had attended the school.

The questionnaire for the Group 1 and 2 students who were still in school, and the structured interview for students who had left, contained lists of school features among which respondents were to indicate what they liked or disliked. There was also a space for "Other - please specify". Lists were arranged with two sets of boxes, one set in which likes were to be marked, the other for dislikes. Thus, if a respondent were neutral about an item he did not need to mark it. The percentages of the students still at school liking and disliking each item are shown in Table 35.

Table 35

Percentages Liking or Disliking Various Aspects of the School, Group 1 and 2 Students still at school, May 1972

Item	% like (N=91)	% dislike (N=91)
My shop specialty	86	5
All the shops I've taken	46	14
The academic subjects	37	21
The teachers	53	15
The school rules	10	63
The students I've met	49	10
The Guidance Counsellors	37	13
The work experience programme	64	20
Other	11	7

The items listed in the interview included, as well as those in Table 35 (some of which were worded a little differently), the items "Some of the teachers" and "Some of the shops". Many students nominated both the "all" and "some" items, which, strictly speaking, may be logical (if one likes all, then one likes some). However, in coding the responses, if both were marked, only the "all" response was coded. The percentage of subjects in the interview group liking or disliking each aspect is shown in Table 36.

Table 36

Percentages Liking or Disliking Various Aspects of the School, all Groups Combined[a]

Item	% like (N=193)	% dislike (N=193)
The academic programme	76	20
All the shops you took	55	1
Some of the shops you took	45	39
Your shop specialty	87	1
The friends you met	82	11
All the teachers	47	1
Some of the teachers	52	45
The Guidance Counsellors	69	15
The school rules	55	43
The work experience programme	75	7
Other	10	5

[a] Excludes students still in school May, 1972.

A few differences between the students still in school and those who had left are apparent in these tables. Most noticeable is the out-of-school students' liking for the academic programme and the Guidance Counsellors. All of this group responded in an interview situation, however, either personal (two thirds) or telephone (one third). The greater incidence of "likes" could have been a result of the more conducive one-to-one situation in an interview. It is interesting to note that almost no one in this group felt neutral about the school rules.

To obtain information on reasons for liking or disliking the school from a wider cross-section of former students, the open-ended comments on the questionnaires were content analysed, by sex and group. Over all groups, male respondents made a total of 264 favourable and 45 unfavourable

comments about the school. Females made 144 favourable and 20 unfavourable comments. Forty-three males and twenty-four females were glad they attended the school but offered no comments. Eight females who were not glad they went to the school did not elaborate their reasons.

On the whole, the types of comments and the relative frequency with which they were made were comparable across groups. An exception was that about ten percent of the students in Group 3, compared with none in Group 1, commented that they appreciated the school because it helped them to get to another high school. The probable reasons for this difference have been explained earlier (see p.34). Almost a fifth of the favourable comments for each sex related to the shop programme, either in general or to a specific course. A further quarter for each sex mentioned the helpfulness or friendliness of a specific teacher or of the teachers in general. Seventeen boys and seven girls said that it was the best school they'd ever been to. About ten per cent of the favourable comments related to job preparation. The remainder of the favourable comments were more to do with feelings of personal well-being - "I felt comfortable there"; "Treated me like a human being"; "I became a person there" - or appreciation of what the school had done for the respondent in a general way - "I learned how to do a lot of useful things"; "It smartened me up in a lot of ways"; "I learned how to listen and understand"; "It is the first time in my life that I was not expected to fail, it gave me confidence to continue". Among the unfavourable comments the most common were that the school did not help the respondent to get a job - "Drafting firms all want grade 12" - the respondent was not able to study the shop course he or she wanted, the rules were too strict, and that there was nothing worthwhile to learn there - "I wasted one year of my life"; "It screwed up my years"; "It's a slow school for slow learners and

it doesn't teach you nothing".

Three other questions reflecting the students' attitudes toward the school were asked in the interview. In response to the question "Do you think the programme ... prepared you well enough for getting a job?" 64% (123) said Yes, 34% said No, and 2% were undecided. Sixty-five per cent said they would recommend the programme to a young person about to start high school, 21% said they would not, 14% said it would depend on the person so they couldn't really say. Seventy per cent (134) said they had been back to visit the school since leaving. Two checklists of possible reasons, one for those who had been back to visit and one for those who had not, were supplied. The percentage of all reasons checked is shown for each reason in the tables on the next page.

Following the question which asked the students if the school's programme had prepared them well enough for getting a job, the respondents were asked to suggest things they would have liked to have included in the programme that were not. More than half of the respondents, whether male or female, working or not working, had nothing to suggest. One of the most common suggestions, in most cases made by students who had transferred to other schools, was that there should be more academic work at higher levels. Another frequently made comment was that the shop specialty courses should involve more time and more intensive training. Now that the programme at the school has been extended to four years, most of these suggestions have been implemented anyway. A few students would have liked longer work experience periods, a few wanted more organised sports, a few wanted a wider variety of shops to choose from. Many of the suggestions made concerned specific topics, for example conversational French (one girl trained in Retailing said she'd had trouble getting a job as a sales clerk because she

Table 37

Reasons for Returning to Visit the School, all Groups Combined

Reason	% of total reasons marked (N^a=307)
To try to get back into the school	2
To get a letter to go to another school	4
To get a letter for a job	1
To see some of the teachers I liked	29
To see some of my friends	13
To attend the Open House	23
To get some help from a teacher	4
Because I like to go back to visit	18
Other	6
Total	100%

a) N refers here to number of reasons, not number of students

Table 38

Reasons for Not Returning to Visit the School, all Groups Combined

Reason	% of total reasons marked (N=65)
I haven't needed to go back for anything	31
I don't like the school	3
I don't like the teachers	5
I've meant to go back but haven't had a chance	52
There's no way I ever want to go back	0
Other	9
Total	100%

couldn't speak French), accounting or book-keeping, more "technical math", chemistry, silk-screening, dry wall construction, plumbing, refrigeration, and shorthand. French, accounting and shorthand were the specific topics suggested most frequently. A few students mentioned "life skills" such as how to complete income tax forms, how to prepare for interviews, practice in filling in job applications, "human relationships training", and "how to decide if you were suited for a job".

2.4 Conclusions and Recommendations

The conclusions from this part of the study tend to echo those from other follow-up studies of occupational or vocational students. Obviously the occupational programme fills a need for an important part of the secondary school population, as evidenced by the high proportion of respondents in this study who were glad they had attended Highland Park High School. The occupational programme still has dropouts, but it seems likely that if the programme did not exist many more students from among the low academic achievers would drop out of high school. (A separate, carefully designed study involving a comparison group of similar students not in occupational programmes would be needed to answer this question).

A higher proportion of students from the occupational programme than the provincial average for their age group and sex were unemployed at the time of the survey, though only a small percentage had had no jobs at all since leaving school. Again, the question of how many of them would have been unemployed if they had not attended the occupational school cannot be answered by the present study.

Former students of occupational programmes do not have very stable job histories. The average number of full-time jobs held by respondents in this study was three, with a few students having had as many as seven

or eight. The median length of time on the first and second jobs was about three months. The median length of time on jobs held at the time of the interview, however, was longer, suggesting that the students needed to sample several jobs before finding jobs that suited them (or at least on which they were prepared to stay). The reasons given for leaving their first jobs showed that a high proportion of the respondents were dissatisfied with some aspect of the jobs.

More than half of the respondents said that their school shop training was of little or no use to them on their present jobs. This has been a common finding in other studies of high school level occupational or vocational programmes both in Canada and in the United States. It would appear that it is not appropriate to think of high school occupational programmes as providing specific training for preparing students for particular jobs or groups of jobs, since so many of the students are not able to find jobs in their areas of training. In spite of this, however, the students regard the vocational parts of the curriculum as valuable. Employers and teachers feel that the development of favourable attitudes toward work and of the ability to get along with other people are the most important objectives of the occupational programme. Where the employers who were interviewed knew about the school and its programme, they had a genuine admiration for its aims.

The average salary for first jobs for the group as a whole was found to be of the order of $75.00 per week. The possession of a Certificate of Training, indicating successful completion of the two year programme, made no significant difference to the average weekly salary earned on first jobs. An average weekly salary of $75.00 represents an average hourly rate of $1.88 for a 40-hour week. Many students on fixed weekly

rates were required to work considerably more than 40 hours, and many being paid on an hourly basis were earning less than the legal minimum (specified for a restricted range of jobs only) rate of $1.75 per hour. However, almost all the employers interviewed said that it was possible for the employees to earn salary raises, even when the job otherwise held no possibilities for advancement. The average weekly salary on jobs held at the time of the interview was about $95.00 for the group as a whole, however. The students who had been out of school longer (Group 3) earned an average weekly salary comparable with the average for the industrial divisions of retail trade and service for the Canadian population as a whole (Statistics Canada, April 1973). Hidden beneath the average figures for weekly salaries for respondents in this study is a great disparity between the sexes, with males in every category earning significantly more than females (see Table 23).

Many of the factors influencing the students' employment status, nature of jobs found and so on are beyond the sphere of influence of any school. However, some recommendations concerning factors in which the schools have some control can be made. These recommendations are not novel, but the findings from the present study reinforce them.

1. In each region which is served by an occupational or vocational school or programme there should be a review committee which regularly examines the needs of industry in the region. Although former occupational students seem to be highly mobile within a city, few of them move away from that city. Most will therefore seek employment in the same locality as the school they attended. It should be possible to help them by adjusting the content and nature of shop courses offered as the demands of local industry change.

2. Since many former students obtain work in which their shop

training is of little use to them, it would be beneficial to maintain as much flexibility as is feasible in a school level programme by providing each student with a variety of skills related to a cluster of jobs, rather than concentrating too heavily on one area of specialization. The "cluster concept" of training students in a range of related skills should be implemented as far as possible. Schools should guard against allowing students to leave the school with unrealistic expectations about the kinds of jobs they will be able to find.

3. The emphasis on favourable work attitudes and learning how to cooperate with others that is currently part of the occupational programme should be maintained.

4. On a more specific level, many employers thought that the students were ill-prepared in "job application" skills and in coping with the paper-work that is a necessary part of many service jobs. These items should, therefore, be given more emphasis in the shop courses.

3. Relationship between Attributes Before Training, Success During Training, and Job Success.

3.1 Related Studies

It would be a task of considerable magnitude to include a review of prediction studies carried out in vocational training programme settings. Further, most studies would at best be only partly relevant to the present research, since few investigators have studied low-achieving high school students of apparently low academic ability, and even fewer have used differential prediction methodology. Neither has it been common for investigators to carry out longitudinal studies in which pre-programme variables are related to training programme outcomes a year or more after programme completion. A few findings from studies which appear to have some relevance to the present research will be summarised here.

Prediger (1968) reviewed studies carried out between 1954 and 1967 on the validity of aptitudes and school achievement for the prediction of success in high school level vocational programmes. He found that the predictability of success in vocational areas was generally much higher in some areas than in others. Shorthand and business education were highest; auto mechanics, carpentry and electricity were lowest. Variables such as motor ability, manual dexterity and IQ were poor predictors of vocational success in most areas. A review by Ghiselli (1966) showed that training programme criteria for adults were more predictable than work performance criteria, though the validity coefficients found were still rather low (the average was .30). The good and poor predictors of training criteria did not closely correspond to the good and poor predictors of job proficiency criteria. However, as Prediger points out, if successful completion of training is a pre-requisite for job entry, it is still useful for counsellors to be able to predict training programme criteria.

In the present study, it was felt that there might be some transfer of predictability from training programme success to on-the-job success, as the shop marks at the school are assigned largely on the basis of performance criteria. Only 25% of the marks in any course are based on written examinations, the remaining 75% being assigned for practical project work in which job-related attributes such as skill in handling equipment, persistence, satisfactory completion of the task, and attitudes are considered. Brenner (1968) found that high school data such as ratings of work habits and co-operativeness, absenteeism and grade-point averages were significantly related to job performance criteria for aircraft plant workers. However, in a study of several hundred students who had undertaken post-secondary vocational training in trades and business, Cox (1971) found no significant relationships between six aptitude measures and a "global definition of vocational success" obtained four years after programme completion.

3.2 Procedures

In carrying out this objective of the follow-up study the work done in the earlier cross-validation study with the 1969 and 1970 cohorts (Lokan and Halpern, 1972: Isabelle and Lokan, 1972) made a sizeable contribution. Since the second of the papers cited here (also funded through the Grants-in-Aid programme) includes a description of all phases of the validity study, only a very brief overview will be given here.

3.2 a) Target Population and Instrumentation

A battery of specially developed predictor tests suitable for low-reading high school students was administered to two successive cohorts of students at Highland Park High School in 1969 and 1970. End of first year grades in academic and shop courses were collected for both groups. Double cross-validation of a selection of the predictor variables was carried out

for five criteria. A list of the selected predictor variables (the "attributes before training" of interest in the follow-up study) and the criteria predicted is shown below. Where two descriptions of a variable are given, the first relates to boys, the second to girls.

Predictors

1. Highland Park Mathematics
2. Filing
3. Number Comparisons
4. Name Comparisons
5. Object Drawing
6. Vocational Interests - White Collar/Clerical
7. Vocational Interests - Blue Collar/Technical
8. Vocational Interests - Service/Service
9. Vocational Interests - Outdoor/Low Level Occupations
10. DAT Mechanical Reasoning (boys only)
11. Reading
12. Non-Verbal IQ

Criteria

1. Academic Average
2. Shop Average, Cluster A - Mechanical/Clerical
3. Shop Average, Cluster B - Aesthetic/Beauty Care
4. Shop Average, Cluster C - Construction/Domestic
5. Shop Average, Cluster D - Miscellaneous/Miscellaneous

The rationale and methodology of allocating shops to clusters has been fully discussed elsewhere (Lokan, 1971). The actual allocation of shops to clusters is shown in Table 39.

The double cross-validated validities and differential validities showed a marked degree of stability. A summary of the absolute validities obtained is given in Table 40.

3.2 b) Data Analyses

The data analyses in this part of the follow-up study were mostly multiple regression analyses, carried out to investigate the relationships between input variables before the training programme and outcome variables both at the end of the programme and some time later. Predictor (input) and criterion (outcome) scores were collected, keypunched, and merged into a

Table 39

Allocation of Shops to Clusters

BOYS		GIRLS	
Cluster	Shop	Cluster	Shop
A	Auto Body	A	Typing & Office Practice
	Auto Service		
	Electrical Repair		
	Graphic Arts	B	Personal Grooming
	Machine Shop		
	Small Engines	C	Dry Cleaning
			Food Services
B	Art		Home Management
	Drafting		Industrial Sewing
	Instrumental Music		
	Painting and Decorating	D	Art
	Retailing		Graphic Arts
	Upholstering		Horticulture
			Hospital Care
C	Carpentry and Millwork		Instrumental Music
	Sheet Metal		Painting and Decorating
	Trowel Trades		Retailing
	Welding		Upholstering
D	Building Maintenance		
	Dry Cleaning		
	Food Services		
	Horticulture		
	Hospital Care		
	Industrial Sewing		
	Typing & Office Practice		

Table 40

Differential Validities for Shop Courses Study:

Multiple R's derived in Double Cross-validation.

	BOYS[a]				GIRLS[b]			
	C - V		DC - V		C - V		DC - V	
Criterion	(1,1)*	(1,2)	(2,2)	(2,1)	(1,1)	(1,2)	(2,2)	(2,1)
Academic average	.61	.54	.64	.51	.73	.66	.69	.66
Shops A average	.41	.44	.46	.39	.60	.35	.47	.46
Shops B average	.33	.28	.46	.18	.37	.45	.50	.28
Shops C average	.32	.32	.37	.25	.53	.40	.50	.42
Shops D average	.36	.26	.32	.23	.30	.39	.54	.22

* Indicates Sample 1 weights used in Sample 1, etc.

a The number of boys in each sample was approximately 200.

b The number of girls in each sample was approximately 100.

disc file which was then processed by the stepwise regression option of the SPSS package (Nie et al, 1970) on an IBM 360/85 computer.

3.3 Results and Discussion

In the follow-up study it was desired to carry out several further regression analyses. The consistency of results from the double cross-validation stage indicated that the most generalizable set of regression weights to use with future samples would be those obtained for the validation and cross-validation samples considered as a single group (the larger the sample in which regression weights are derived, the less the weights are likely to be biased by chance effects). Thus the predictor and criterion data for the 258 students in the Validation sample (Sample 1) and the 290 students in the cross-validation sample (Sample 2) for whom complete predictor and criterion data were available were pooled. Separate prediction equations were then derived for each of the criteria for each sex. The predictors selected by the stepwise routines, the beta weights, and the multiple R's derived in these analyses are shown in Table 41 for boys and Table 42 for girls. For comparison purposes the R's obtained in the samples separately are included in the tables (it should be noted that these are not the cross-validated R's).

It was also desired to investigate the ability of the measures of attributes preceding training (the predictors) to predict success at the end of second year. It is a usual finding in validity studies that the longer the time interval between collection of predictor and criterion data, the less accurate the predictions made will be. The end of second year marks in all academic and shop courses were collected for both samples. Some difficulty was experienced in obtaining shop marks for Sample 2, so that the data used for this sample was based on only about two thirds of the

Table 41

Standardized Regression Weights (β) and Multiple Correlations for Restricted Predictor Battery - BOYS

First Year

Samples 1 and 2 Combined (N = 342)

Criterion	Predictors[a]	β	R	Sample 1 only R	Sample 2 only R
Academic average	H.Pk.Math	.4806	0.61	0.61	0.64
	Object Drawing	.1538			
	Filing	.1366			
Shops A average	Mech.Reasoning	.2235	0.46	0.41	0.46
	Filing	.1477			
	VII Blue Collar	.1211			
	H.Pk.Math	.1101			
Shops B average	H.Pk.Math	.1813	0.42	0.33	0.46
	Object Drawing	.1802			
	VII Blue Collar	.1222			
	Name Comparisons	.1308			
	IQ	.1382			
Shops C average	Mech.Reasoning	.1232	0.40	0.32	0.37
	Number Comparisons	.1648			
	Object Drawing	.1778			
	H.Pk.Math	.2329			
	Reading	-.1688			
Shops D average	Name Comparisons	.1705	0.40	0.36	0.32
	Filing	.1224			
	VII Outdoor	.1180			
	Number Comparisons	.1708			
	VII White Collar	.1198			

[a] Up to five tests added, as long as R^2 increased by at least .01

Table 42

Standardized Regression Weights (β) and Multiple Correlations for Restricted Predictor Battery - GIRLS

First Year

Samples 1 and 2 Combined (N = 206)

Criterion	Predictors[a]	β	R	Sample 1 only R	Sample 2 only R
Academic average	H.Pk.Math	.5873	0.71	0.73	0.69
	Object Drawing	.1643			
	Name Comparisons	.1107			
Shops A average	IQ	.1431	0.49	0.60	0.47
	Name Comparisons	.1435			
	Reading	.1576			
	VII Technical	-.1363			
	Number Comparisons	.1516			
Shops B average	H.Pk.Math	.5266	0.57	0.37	0.50
	VII Technical	.2121			
	Filing	-.2493			
	IQ	.1716			
	VII Service	.0915			
Shops C average	H.Pk.Math	.3833	0.51	0.53	0.50
	Reading	.0873			
	Object Drawing	.1218			
	Name Comparisons	.1378			
Shops D average	H.Pk.Math	.2540	0.40	0.30	0.54
	Reading	.1885			
	VII Outdoor	.0702			

[a] Up to five tests added, as long as R^2 increased by at least .01

students who were still at school at the end of second year. The missing marks were spread over most of the shop courses (the missing records were for home form groups, not shop course groups), therefore it was felt that it would still be worth-while to perform the regression analyses. The predictors selected in the stepwise analyses for each of the five criteria are shown, with their beta weights and resulting multiple R's, for boys in Table 43 and girls in Table 44. It can be seen that the R's for the combined samples of boys when end of second year marks are being predicted are somewhat lower for three of the five criteria than when end of first year marks are involved. For girls, however, little difference is noted. The question of whether the results for the second year groups are influenced very much by range restriction inevitably arises here. Students remaining in school to complete a course are usually different in important aspects from those who drop out. The mean scores on all predictor variables were examined within sex for "students still in school" versus "dropouts". In no case was there a difference large enough to be significant at the .05 level. Nor were there appreciable differences in standard deviations. Whatever restrictions in range there were were not revealed by the predictor tests. On the face of it, it appears that criteria at the end of second year can be predicted reasonably well by the tests in the battery. Before this could be said with any confidence, however, the predictions would have to be cross-validated (if time had permitted, this step would have been carried out at least for the boys, since sufficient data is available for them).

The shortage of employer rating data relating to the students' job performance posed a serious problem for analysing relationships between predictor test data, school marks, and subsequent job success. Many other criteria of job success were examined in detail in Section 2 of this report.

Table 43

Standardized Regression Weights (β) and Multiple Correlations for Restricted Predictor Battery - BOYS

Second Year

Samples 1 and 2 Combined (N=177)

Criterion	Predictors[a]	β	R	Sample 1 only R
Academic average	Filing	.2267	0.46	0.54
	Object Drawing	.2828		
	H.Pk. Math	.2015		
	Reading	-.1720		
	Number Comparisons	.1256		
Shops A average	H.Pk. Math	.1567	0.36	0.41
	Object Drawing	.1368		
	Mech. Reasoning	.1380		
	VII Blue Collar	.1146		
	Name Comparisons	.0961		
Shops B average	Filing	.1800	0.31	0.39
	Reading	-.1974		
	Number Comparisons	.1928		
	Name Comparisons	-.1723		
	H.Pk. Math	.1761		
Shops C average	Mech. Reasoning	.2270	0.49	0.57
	VII Blue Collar	.3425		
	Object Drawing	-.1923		
	Filing	.1887		
	VII Outdoor	-.1666		
Shops D average	H.Pk. Math	.3561	0.39	0.41
	Reading	.1651		
	VII Outdoor	.0909		
	Name Comparisons	-.0790		
	Filing	-.0850		

[a] Up to five tests added, as long as R^2 increased by at least .01

Table 44

Standardized Regression Weights (β) and Multiple Correlations for Restricted Predictor Battery - GIRLS

Second Year

Samples 1 and 2 Combined (N=93)

Criterion	Predictors[a]	β	R	Sample 1 only R
Academic average	H.Pk. Math	.4265	0.59	0.61
	Object Drawing	.2689		
	Name Comparisons	-.2181		
	IQ	.2838		
	Number Comparisons	-.1868		
Shops A average	H.Pk. Math	.6771	0.62	*
	VII Service	.3438		
	IQ	-.3305		
	Object Drawing	.2085		
	Number Comparisons	-.1908		
Shops B average	H.Pk. Math	.4331	0.59	*
	VII Technical	.3109		
	VII Service	-.2650		
	Number Comparisons	-.1523		
Shops C average	Object Drawing	-.2936	0.44	*
	Reading	.2262		
	Name Comparisons	-.2116		
	H.Pk. Math	.1913		
	VII Service	-.1067		
Shops D average	IQ	.2060	0.50	0.58
	Reading	.2638		
	VII Service	.1855		
	H.Pk. Math	.1839		
	Name Comparisons	-.1591		

[a] Up to five tests added, as long as R^2 increased by at least .01

* Not computed, because less than 50 cases available

It has already been seen that the possession of a Certificate of Training, which can be regarded as a measure of school success (but see p.33 ff), had little bearing on such indices of success as employment status or salary earned. From the point of view of the objectives of the study it would have been desirable to collect detailed ratings of the subjects' work performance from their employers. However, as discussed earlier (see p. 27), ethical considerations limited us to asking a single question, yielding only a global rating of success, for a reduced sample of seventy respondents who gave permission for their employers to be interviewed. Only 33 of these respondents were from the 1969 cohort and had complete predictor data available.

With such a small sample, consisting of 19 boys and 14 girls, there was no point in doing any multiple regression analyses to locate variables among the predictor tests or criterion averages which were predictive of over-all job success. Pearson correlation coefficients were computed by sex for the employer ratings with each of the predictors, and with first and second year marks. A few significant relationships were found, but, because of the very small numbers of respondents involved, these were probably not representative of what would be found with larger groups. No significant relationships were found between employer ratings of success on the job and school marks for males. For females, marks in the Typing shop course at both first and second year levels were significantly related (at the .05 level) to job performance ratings. Among the predictor variables, high interest in the Service tasks on the Interest Inventory for females was associated with better job performance. For males, however, the only significant relationships between employer ratings of job performance and predictor scores were negative. Males with high scores in the Service

and Technical categories of the VII tended to perform less well than those with low scores in these categories. Likewise, non-verbal IQ was negatively related to job performance[1]. These results, which must be regarded as very tentative because of the small sample size, nevertheless seem to be readily interpretable in the context of the generally low level tasks involved in the jobs held by most of the respondents.

3.4 Summary[2]

The students who dropped out of the occupational programme before the end of second year were not different from those who remained at the school on any of the predictor variables included in the battery. Reasons for dropping out, therefore, could not be explained in terms of the psychological traits covered by the battery. To obtain a "profile of the dropout" other domains of variables would need to be investigated, for example home conditions or personality variables. Although not predictive of who would drop out of the programme, the variables in the test battery were able to predict performance in academic and shop courses at the end of second year almost as well as performance at the end of first year. Because of the very small number of students with complete predictor data whose employers were interviewed, no multiple regression analyses were carried out with on-the-job performance as criterion. Significant negative relationships were found for males between rated job performance and three predictor variables (IQ and two interest scale scores). It would appear that the brighter, more initially motivated males do not perform as well in low level, repetitive jobs as their less bright, less motivated colleagues.

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[1] The significance levels of the relationships were .05, .01 and .05, respectively.

[2] This summary refers to Section 3 only. A summary of the entire study may be found at the beginning of the report.

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